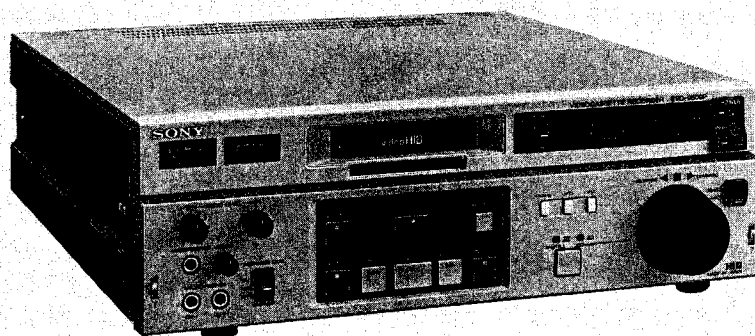


Hi8

VIDEOCASSETTE RECORDER

EVO-9800P



SONY[®]
SERVICE MANUAL

ADVARSEL!

Lithiumbatteri-Eksplosionsfare
Udskiftning må kun foretages af en sagkyndig,
og som beskrevet i servicemanualen.

Litiumbatteri

Bor endast bytas av servicepersonal.
Explosionsfara vid felaktig hantering.

LITHIUM BATTERY

SHOULD ONLY BE CHANGED BY TECHNICAL PARSONNEL.
THERE IS A RISK OF EXPLOSION IF HANDLED IMPROPERLY.

1-528-229-11

NOTES ON LITHIUM BATTERY

FOR SAFETY CHANGE:

- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with Metallic Tweezers, otherwise a short circuit may occur.

FOR SAFETY DISPOSAL:

- Do not break up the battery nor throw it into a fire which might cause it to explode.
- Carefully dispose of the used batteries.

(FOR UK ONLY)

- Wrap the battery in plastic bag and throw it in the waste bin.

FOR REPLACEMENT:

- CAUTION: Because of the risk for explosion the battery must be replaced with the same type and manufacturer.

TABLE OF CONTENTS

1. GENERAL DISCRIPTION

| | |
|--|------|
| 1-1. Features | 1-1 |
| 1-2. Location and Function of Parts and Controls | 1-2 |
| 1-3. Notes on Video Cassette | 1-10 |
| 1-4. Connections | 1-11 |
| 1-4-1. Basic Connections | 1-11 |
| 1-4-2. Connections of Headphones and Microphones | 1-12 |
| 1-5. Editing | 1-12 |
| 1-6. Installation of BKU-703A (33P) Editing Interface | 1-13 |
| 1-7. Rack Mounting | 1-13 |

2. SERVICE INFORMATION

| | |
|---|------|
| 2-1. Removal and Installation of the Cabinet | 2-1 |
| 2-2. Removal of the Mecha Deck Block | 2-2 |
| 2-3. Removal of the Cassette-up Compartment Assembly | 2-2 |
| 2-4. Removal of the Power Supply Block | 2-2 |
| 2-5. Service of the Printed Circuit Boards | 2-2 |
| 2-5-1. Servicing the AU-127 Board | 2-2 |
| 2-5-2. Servicing the DC-45A Board | 2-3 |
| 2-5-3. Opening the VO-30 and YC-46 Boards | 2-3 |
| 2-5-4. Opening the SY-145A Board | 2-3 |
| 2-5-5. Opening the MB-19 and MD-23 (P) Boards | 2-3 |
| 2-5-6. Opening the HK-5 Board | 2-4 |
| 2-5-7. Opening the SE-10 (P) Board | 2-4 |
| 2-5-8. Removal of the RS-31 Board | 2-5 |
| 2-6. Function Control Panel Positioning | 2-6 |
| 2-7. Location of Main Parts | 2-7 |
| 2-7-1. Location of the Main Mechanical Parts/Components | 2-7 |
| 2-7-2. Location of the Printed Circuit Boards | 2-8 |
| 2-8. Printed Circuit Boards | 2-9 |
| 2-9. Connectors | 2-9 |
| 2-10. Connector Input/Output Signal | 2-10 |
| 2-11. Spare Parts | 2-11 |
| 2-12. Muting of the Tape Beginning Sensor and Tape End Sensors | 2-11 |
| 2-13. How to Operate the Unit Without Cassette-up Compartment and Cassette Tape Inserting | 2-12 |
| 2-14. Cassette Tape Removal Procedure When Normal Ejection is Not Possible | 2-13 |
| 2-15. Fixture | 2-14 |
| 2-16. Dial Menu Operation | 2-16 |

| | |
|--|------|
| 2-16-1. Button and Dial Settings | 2-16 |
| 2-16-2. Operation | 2-16 |
| 2-16-3. Item/Data | 2-19 |
| 2-16-4. System Error | 2-23 |
| 2-17. Timing Chart | 2-30 |

3. PERIODIC CHECK MAINTENANCE

| | |
|---|-----|
| 3-1. Maintenance After Repairs | 3-1 |
| 3-2. Periodic Check | 3-1 |
| 3-3. Hours Meter | 3-2 |
| 3-4. How to Use the Cleaning Tape | 3-3 |
| 3-5. Others | 3-3 |

4. REPLACEMENT OF MAJOR PARTS

| | |
|---|------|
| 4-1. Replacement of the Fly Wheel | 4-3 |
| 4-2. Replacement of the Rotary Upper Drum | 4-4 |
| 4-3. Replacement of the Drum Assembly | 4-6 |
| 4-4. Replacement of the Threading Ring Assembly | 4-8 |
| 4-5. Replacement of the Pinch Roller Arm Assembly | 4-10 |
| 4-6. Replacement of the Capstan Motor | 4-12 |
| 4-7. Replacement of the Threading Motor Assembly | 4-13 |
| 4-8. Replacement of the Reel Motor | 4-14 |
| 4-9. Replacement of the No.3 and No.4 Guides | 4-15 |
| 4-10. Replacement of the Entrance Guide (P) Assembly (No.2 Guide Assembly) | 4-16 |
| 4-11. Replacement of the Slant Guide Assembly | 4-17 |
| 4-12. Replacement of the No.5 Guide Block Complete Assembly | 4-18 |
| 4-13. Replacement of the S Reel Table Assembly | 4-19 |
| 4-14. Replacement of the T Reel Table Assembly | 4-20 |
| 4-15. Replacement of the Pinch Press Arm Assembly | 4-21 |
| 4-16. Replacement of the Tension Regulator Arm Assembly | 4-21 |
| 4-17. Replacement of the Tension Regulator and Assembly | 4-23 |
| 4-18. Replacement of the L Slider Assembly | 4-24 |
| 4-19. Replacement of the L-Switch Assembly | 4-26 |
| 4-20. Replacement of the Plunger Solenoid | 4-28 |
| 4-21. Replacement of the M-Switch Assembly | 4-29 |
| 4-22. Replacement of the M Slider | 4-31 |
| 4-23. Installation of the Block Plate Assembly | 4-33 |

| | |
|--|------|
| 4-24. Parallelism Adjustment of the Cassette Holder Block | 4-34 |
|--|------|

5. TORQUE AND BACK TENSION ADJUSTMENT

| | |
|---|-----|
| 5-1. Check of the Main Brake Torque | 5-1 |
| 5-1-1. S Main Main Brake Torque | 5-1 |
| 5-1-2. T Main Brake Torque | 5-2 |
| 5-2. Check of the Soft Brake Torque | 5-3 |
| 5-2-1. S Side Soft Brake Torque | 5-3 |
| 5-2-2. T Side Soft Brake Torque | 5-4 |
| 5-3. Check of the REW Brake Torque | 5-5 |
| 5-4. Check of the FWD, RVS Take-Up Torque Cassette | 5-5 |
| 5-5. FWD Back Tension Adjustment | 5-6 |

6. TAPE PATH ADJUSTMENT

| | |
|---|------|
| 6-1. Connection of the Track Shift Tool | 6-1 |
| 6-2. Preparation for Adjustment | 6-3 |
| 6-3. Tape Path System Adjustment Table | 6-5 |
| 6-4. Tape Entrance Side Adjustment | 6-6 |
| 6-5. Tape Exit Side Adjustment | 6-8 |
| 6-6. Check After Adjustment | 6-12 |

7. POWER SUPPLY AND SYSTEM CONTROL ALIGNMENT

| | |
|------------------------------------|-----|
| 7-1. +5V Adjustment | 7-1 |
| 7-2. RF Det Level Adjustment | 7-1 |

8. SERVO SYSTEM ALIGNMENT

| | |
|--|-----|
| 8-1. Capstan FG Duty Adjustment | 8-1 |
| 8-2. Reel FG Adjustment | 8-2 |
| 8-3. Drum Free Speed Adjustment | 8-2 |
| 8-4. Capstan Free Speed Adjustment | 8-3 |
| 8-5. Switching Position Adjustment | 8-4 |
| 8-6. ATF BPF Balance Adjustment | 8-5 |
| 8-7. STILL Adjustment | 8-6 |
| 8-8. SP SLOW Adjustment | 8-7 |
| 8-9. LP SLOW Adjustment | 8-7 |
| 8-10. SP SLOW f_H Adjustment | 8-8 |
| 8-11. LP SLOW f_H Adjustment | 8-8 |
| 8-12. Capstan FG Adjustment | 8-9 |

9. AUDIO SIGNAL SYSTEM ALIGNMENT

| | |
|--|-----|
| 9-1. PCM Master Clock Adjustment | 9-1 |
| 9-2. PCM Playback VCO Free-Frequency Adjustment | 9-1 |
| 9-3. D/A Converter Level Adjustment | 9-2 |

| | |
|---|-----|
| 9-4. NR Decode Level Adjustment | 9-2 |
| 9-5. A/D Converter Offset Adjustment | 9-2 |
| 9-6. PCM REC Level Adjustment | 9-2 |
| 9-7. PCM PB Line Output Level Adjustment | 9-3 |
| 9-8. AFM PB Line Output Level Adjustment | 9-3 |
| 9-9. E-E Level Adjustment | 9-3 |
| 9-10. E-E PB Line Output Level Adjustment | 9-3 |
| 9-11. Audio Level Meter Adjustment | 9-4 |
| 9-12. MIC Input Level Adjustment (CH-1) | 9-4 |
| 9-13. MIC Input Level Adjustment (CH-2) | 9-4 |

10. VIDEO SIGNAL SYSTEM ALIGNMENT

| | |
|---|-------|
| 10-1. SP PB Frequency Response Adjustment | 10-2 |
| 10-2. LP PB Frequency Response Adjustment | 10-2 |
| 10-3. Flying Erase Confirmation | 10-3 |
| 10-4. Subcarrier Frequency Adjustment | 10-3 |
| 10-5. PB C Comb Filter Adjustment | 10-3 |
| 10-6. SYNC AGC Adjustment | 10-4 |
| 10-7. AGC Output Level Adjustment | 10-4 |
| 10-8. E-E Y Output Level Adjustment | 10-5 |
| 10-9. STD Mode PB Y Level Adjustment | 10-5 |
| 10-10. PB De-emphasis Adjustment | 10-6 |
| 10-11. Hi8 Mode PB Y Level Adjustment | 10-6 |
| 10-12. STD Mode Y FM Carrier Adjustment | 10-6 |
| 10-13. STD Mode Y FM Deviation Adjustment | 10-7 |
| 10-14. Hi8 Mode Y FM Carrier Adjustment | 10-7 |
| 10-15. Hi8 Mode Y FM Deviation Adjustment | 10-7 |
| 10-16. 375 f_H VCO Adjustment | 10-8 |
| 10-17. Chroma Emphasis f_0 Adjustment | 10-8 |
| 10-18. f_H VCO Adjustment | 10-8 |
| 10-19. Gain Control Amp Adjustment | 10-9 |
| 10-20. Carrier Balance Adjustment | 10-9 |
| 10-21. REC Y RF Level Adjustment | 10-10 |
| 10-22. REC C RF Level Adjustment | 10-10 |
| 10-23. SP REC Current Adjustment | 10-11 |
| 10-24. DOC Level Adjustment | 10-12 |
| 10-25. Y/C Delay Adjustment | 10-13 |
| 10-26. Carrier-Leak Cancel Adjustment (1) | 10-14 |
| 10-26-1. External Sync AFC Adjustment | 10-14 |
| 10-26-2. Sync Generator Clock Adjustment | 10-14 |
| 10-26-3. AFC Adjustment | 10-14 |
| 10-26-4. APC Adjustment | 10-14 |
| 10-27. Carrier-Leak Cancel Adjustment (2) | 10-15 |
| 10-28. Noise Cancel Adjustment | 10-16 |
| 10-29. Y A/D Output Level Adjustment | 10-16 |
| 10-30. CNR Mode Line Output Level Adjustment | 10-17 |
| 10-31. Line Output Level Adjustment | 10-18 |
| 10-32. Monitor Output Level Adjustment | 10-18 |

| | |
|--|-------|
| 10-33. DUB Y Output Level Adjustment | 10-19 |
| 10-34. High Speed ACC Gate Width Adjustment | 10-19 |
| 10-35. High Speed ACC Level Adjustment | 10-20 |
| 10-36. Chroma A/D Input Level Adjustment | 10-20 |
| 10-37. CNR Mode Chroma Output Level Adjustment | 10-21 |
| 10-38. Chroma Noise Cancel Adjustment | 10-21 |
| 10-39. DUB Y/C Delay Adjustment | 10-22 |
| 10-40. 1st Field Pulse Width Adjustment | 10-22 |
| 10-41. Local Oscillator Frequency Adjustment | 10-23 |
| 10-42. Pilot Burst Adjustment (1) | 10-23 |
| 10-43. Pilot Burst Adjustment (2) | 10-24 |
| 10-44. DUB Chroma Output Level Adjustment | 10-24 |
| 10-45. Y/C Mix Adjustment | 10-24 |
| 10-46. Character Mix Adjustment | 10-25 |
| 10-47. Slow Tracking Adjustment | 10-25 |
| 10-48. Character Display Range Adjustment | 10-26 |

11. BLOCK DIAGRAMS

| | |
|---------------------------------------|-------|
| OVERALL (1/2) | 11-2 |
| OVERALL (2/2) | 11-3 |
| CORE DECK BLOCK | |
| Y PROCESS | 11-4 |
| CHROMA PROCESS | 11-5 |
| REC/PB HEAD AMP | 11-6 |
| PCM AUDIO | 11-7 |
| DRUM/CAPSTAN/ATF SERVO | 11-8 |
| REEL SERVO, SYSTEM CONTROL | 11-9 |
| FEEDER BLOCK | |
| VIDEO INTERFACE | 11-10 |
| DIGITAL CNR | 11-11 |
| AUDIO SYSTEM | 11-12 |
| SYSTEM CONTROL | 11-13 |
| CTL DETECTOR/FUNCTION KEY BOARD | 11-14 |

12. SEMICONDUCTOR PIN ASSIGNMENT

| | |
|---------------------------|-------|
| SEMICONDUCTOR INDEX | 12-1 |
| IC | 12-3 |
| TRANSISTOR | 12-36 |
| DIODE | 12-37 |

13. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

| | |
|--|------|
| Circuit Function of The Printed Circuit Boards | 13-1 |
|--|------|

CORE DECK BLOCK

VIDEO

| | |
|------------------|------|
| FR-43 | 13-2 |
| RP-103 | |
| RP-73 (LP) | |
| HK-5 | 13-4 |

AUDIO

| | |
|-------------|-------|
| MB-19 | 13-10 |
| PD-19 | 13-12 |
| PA-27 | 13-13 |

SERVO • SYSTEM CONTROL

| | |
|--------------|-------|
| SE-10P | 13-14 |
| IG-4 | 13-18 |
| MD-23P | 13-20 |
| TS-74 | |
| RS-31 | |
| LD-1 | |
| LS-9 | |
| MS-4 | 13-73 |

FEEDER BLOCK

VIDEO

| | |
|--------------|-------|
| VO-30 | 13-24 |
| CP-162 | 13-30 |
| YC-46 | |
| DI-12 | 13-32 |
| DI-13 | 13-40 |

AUDIO

| | |
|---------------|-------|
| AA-16 | 13-41 |
| AU-127 | 13-42 |
| HP-42 | 13-44 |
| MC-28 | |
| MT-57 | |
| SW-346 | |
| CP-141 | 13-45 |
| SW-347A | |

SYSTEM CONTROL

| | |
|---------------|-------|
| SY-145A | 13-46 |
| KY-162 | 13-52 |
| DP-101 | |
| DD-12 | |
| LP-52 | |
| PTC-32 | 13-54 |
| SW-348 | |

POWER

| | |
|-------------------|-------|
| UR-14E | 13-55 |
| DC-45A | 13-56 |
| FRAME (1/2) | 13-58 |
| FRAME (2/2) | 13-59 |
| AC-89 | |
| RM-83 | |

14. SPARE PARTS AND FIXTURE

| | |
|---|-------|
| 14-1. Parts Information..... | 14-1 |
| 14-2. Exploded Views | 14-2 |
| Reel Table Block | 14-3 |
| Threading Ring and Tape Path Blocks..... | 14-4 |
| Head Drum and Threading Control Blocks | 14-5 |
| Mechanism Control Block | 14-6 |
| Cassette Up Compartment Block (1) | 14-7 |
| Cassette Up Compartment Block (2) | 14-8 |
| Printed Circuit Boards Block (Mechanical Deck) | 14-9 |
| Function Control Chassis Block | 14-10 |
| Connector Panel Block | 14-11 |
| Printed Circuit Boards | 14-12 |
| Ornamental Panel Block | 14-13 |
| 14-3. Electrical Parts List | 14-15 |
| 14-4. Packing Material and Accessories | 14-57 |
| 14-5. Fixture (Option) | 14-57 |

SECTION 1 GENERAL DESCRIPTION

1-1. FEATURES

High-quality picture in Hi8 video system

Thanks to the Hi8 video system, picture quality of 8mm video system is extremely improved. A metal tape with large magnetic energy allows high-density recording, and makes it possible to record and play back a high-quality picture.

Automatic editing system

Using the EVO-9800P, an automatic editing system can be composed together with an RM-450CE editing control unit and a VO-9850P U-matic VTR. The EVO-9800P functions as a player in this system, which allows high-quality and precise editing of the program recorded with a compact and light-weight 8 mm camcorder.

Chroma noise reducer

Thanks to a digital chroma noise reducer, a life-like color reproduction will be possible. The chroma noise reducer can also eliminate the jitter so that a stable playback picture can be obtained.

Hi-Fi sound with the AFM and PCM recording

A monaural AFM recording and two-channel PCM recording with wide dynamic range can be simultaneously executed. Cannon XLR 3-pin connectors usually used for professional audio equipment are employed for the audio inputs and outputs.

Recording and playback of the 8 mm time code

The 8mm time code can be recorded on a tape on which video and audio signals have been recorded. The 8 mm time code being played back is transferred to the RS-422A serial interface time code data, and output from the REMOTE 1 (9P) connector. Using this time code data, precise editing will be possible.

Search operation

A search dial with the shuttle and jog functions is furnished. In shuttle mode, playback pictures can be viewed at various speed from 1/30 times to 15 times normal speed in forward direction, or from 1/30 times to 13 times normal speed in reverse direction as well as in a still mode. In jog mode, playback pictures from still to ± 1 time normal speed can be viewed.

As the playback can be performed in both forward and reverse directions, any desired scene can be easily found.

LED time counter

The time counter indicates the tape running time and the 8 mm time code in hours, minutes, seconds and frames by the LEDs. These are useful to check the recording time of a material and the current tape position.

Remote control

The unit is equipped with a 9-pin remote control connector. When the equipment which has a 9-pin remote connector such as an RM-450CE editing control unit, is connected here, the EVO-9800P can be remotely controlled with this unit.

When a BKU-703A 33-pin editing interface (optional) is installed in the EVO-9800P, it can be remotely controlled by the equipment with a 33-pin remote connector such as an RM-440.

Dial menu operation

With the search dial, you can change the setting values for the 8 mm time code and others.

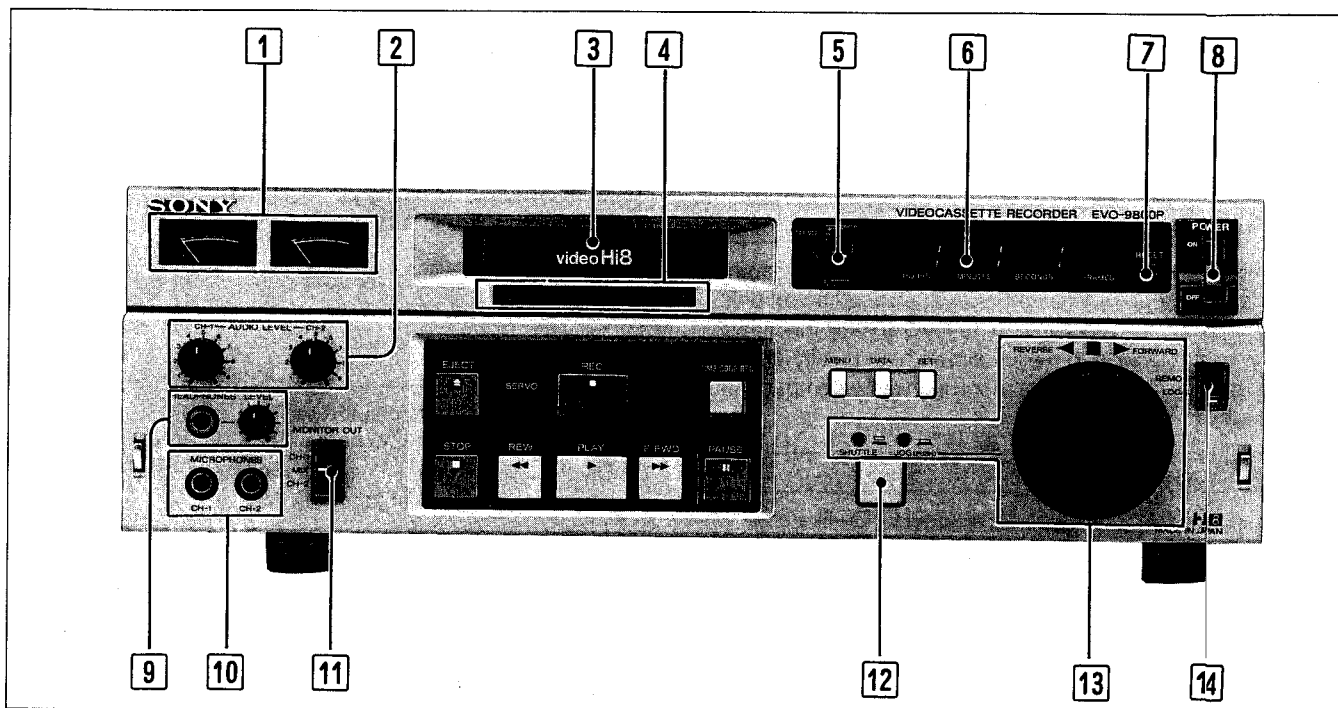
Dubbing connectors

A connector for duplicating video signals for a U-matic VTR is furnished.

S-VIDEO input and output connectors

The separated Y (luminance) and C (chrominance) signals can be fed to and from the EVO-9800P through the S-VIDEO input and output connectors, which results in high quality pictures.

1-2. LOCATION AND FUNCTION OF PARTS AND CONTROLS (FRONT PANEL)



1 Audio level meters

Audio recording level is shown in recording, and audio playback level in playback.

2 AUDIO LEVEL controls

3 Cassette compartment

4 Indicator section

| | |
|-----------------|--|
| | Lights when a cassette is in the cassette compartment. |
| AUTO OFF | Lights at power-on when moisture is condensed inside the unit. While this indicator is lit, a cassette cannot be loaded. |
| STANDBY | Lights while a tape is being threaded from or unthreaded to the cassette inside the unit. |
| TC | Lights when 8 mm time code is being recorded, or when the tape on which 8 mm time code is recorded is played back. |
| PCM | Lights when PCM sound is recorded on the tape or during PCM audio recording. |
| SP* | Lights when the tape speed is in SP (standard play) mode. |
| Hi8* | Lights when the tape is recorded in the Hi8 video system. |

* The SP and Hi8 indicators will light when the power is turned on, and when a tape not recorded in SP or Hi8 mode is inserted, the corresponding indicator will go out.

5 COUNTER/TC/DIAL MENU selector

Selects what is displayed in the time counter display 6 as follows.

| | |
|------------------|---|
| COUNTER | Displays time period of tape travel in hours, minutes, seconds and frames. |
| TC | Displays 8 mm time code. |
| DIAL MENU | The unit goes into the dial menu operation mode and the dial menu will be displayed. In this mode, any other functions are deactivated. |

Note

You can put the EVO-9800P in the dial menu operation mode with the REMOTE/LOCAL selector 14 set to LOCAL, only when a cassette is not inserted or when the unit is in the stop mode.

6 Time counter display

Displays the item selected by the COUNTER/TC/DIAL MENU selector 5.

7 RESET button

When the COUNTER/TC/DIAL MENU selector [5] is set to the COUNTER position and the time counter display [6] shows the time period of the tape travel, press to reset the time counter to 0:00:00:00.

8 POWER switch

9 HEADPHONES connector (stereo phone jack), HEADPHONES LEVEL control

10 MICROPHONES CH-1 and CH-2 connectors (phone jacks)

11 MONITOR OUT switch

Select the sound to be monitored through headphones or a speaker of a video monitor.
The sound selected by the OUTPUT SELECT switch on the subpanel is selected as follows:

| | |
|-------------|--|
| CH-1 | To hear the channel-1 sound only |
| MIX | To hear the sounds both on channels 1 and 2* |
| CH-2 | To hear the channel-2 sound only |

* When stereo headphones are used, the sound of channel 1 will be heard from the left unit and the sound of channel 2 from the right unit. When a monitor speaker connected to the MONITOR AUDIO or TV connector is used, mixing sound of both channels 1 and 2 will be heard.

12 Search button

Press to put the unit in the search mode, and the search operation with the search dial in jog or shuttle mode will be possible.

If the setting of the dial menu number 209 is changed, the unit enters the search mode without pressing the search button.

See "Dial Menu Operation" for details.

13 Search dial and SHUTTLE/JOG lamps

Functions as a search dial for quickly locating edit points or as a selector for the dial menu operation according to the setting of the COUNTER/TC/DIAL MENU selector [5].

| Setting | Function |
|---------------|----------------------|
| COUNTER or TC | Search for a scene. |
| DIAL MENU | Dial menu operation. |

The details of the function are as follows:

Search for edit points

Set the COUNTER/TC/DIAL MENU selector [5] to COUNTER or TC, and press the search button [12]. The search dial can make the tape run in jog or shuttle mode. Push in to change from the shuttle mode to the jog mode and push it in again to change back. The corresponding lamp lights to show the current mode. Rotate the dial clockwise to run the tape forward (the ► FORWARD lamp lights), and counterclockwise to run the tape in reverse (the REVERSE ◀ lamp lights).
When the tape stops, the ■ lamp lights.

| | |
|----------------|---|
| SHUTTLE | Set the dial to one of 16 positions to run the tape at a speed from 1/30 to 15 times normal speed in forward direction, and from 1/30 to 13 times normal speed in reverse direction. A still picture is obtained at the center detent position. |
| JOG | The dial turns freely. The tape runs at a speed from 0 to 1 times normal speed while the dial is rotated. When the dial is stopped, a still picture is obtained. |

Note

When playback at slow speed less than 1/2 time normal speed continues for about 30 seconds in shuttle or jog mode, the playback automatically stops.

Dial menu operation

Set the COUNTER/TC/DIAL MENU selector to DIAL MENU. Rotate the dial while pressing the MENU button [24] or the DATA button [25] to set characters or numbers on the display.

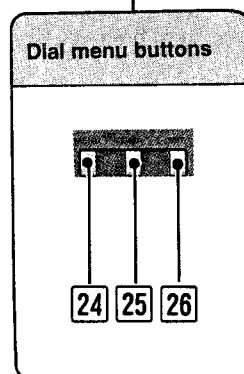
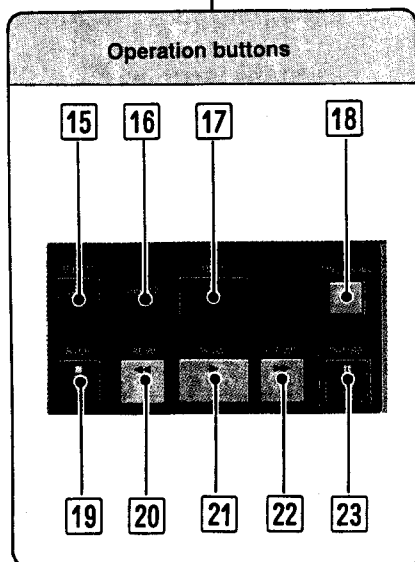
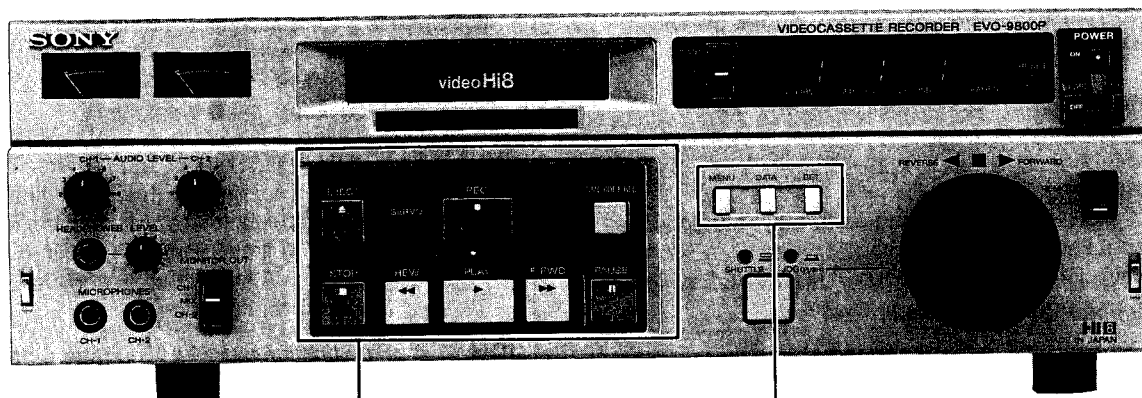
See "Dial Menu Operation" for details.

14 REMOTE/LOCAL selector

Use this selector to control this unit with other equipment connected to the REMOTE 1(9P) connector on the rear panel.

The functions are controlled as follows:

| | |
|---------------|---|
| REMOTE | Set to this position when you want this unit to be controlled by the unit connected to the REMOTE 1 (9P) connector (9-pin). With this selector set to REMOTE, none of the operation buttons for tape travel, except for the STOP and EJECT buttons, will function. |
| LOCAL | Set to this position to operate this unit alone. |



Operation buttons

15 EJECT ▲ button

Press to eject the video cassette.

16 SERVO lamp

With the PLAY ► button pressed, normally the drum and capstan servo-mechanisms will start working properly. This lamp lights when the servo-mechanisms are locked in a reference signal.

Note

The SERVO lamp blinks if the servo-mechanisms are not locked in during editing.

17 REC ● (record) button and indicator

For recording, press this button simultaneously with the PLAY ► button.

18 TIME CODE REC button

For recording the 8 mm time code, press this button simultaneously with the PLAY ► button.

Note

While the 8 mm time code is recorded, lower part of the picture on the monitor is blanked by a black bar.

19 STOP ■ button

Press to stop the operation of the unit. The E-to-E mode picture can be seen on the monitor screen.

20 REW ◀◀ (rewind) button and lamp

Press to rewind the tape. The E-to-E mode picture can be seen on the monitor screen.

21 PLAY ► button and lamp

Press to play the tape back. Simultaneously pressing this button with the REC ● button sets the unit in the record mode: simultaneously pressing it with the TIME CODE REC button sets the unit in the 8 mm time code recorded mode.

22 F FWD ►► (fast forward) button and lamp

Press to advance the tape rapidly. The E-to-E mode picture can be seen on the monitor screen.

Note

When the tape runs by pressing the F FWD or REW button with the COUNTER/TC/DIAL MENU selector set to COUNTER, the counter indication and actual tape position may not correctly match.

E-to-E (Electric-to-Electric) mode

An input video signal which has passed through the amplifier in the recorder, is displayed on the monitor screen. This is the E-to-E mode picture, permitting the input signal to be checked on the monitor screen.

The unit automatically enters the E-to-E mode when it is set in the stop, F FWD or REW mode.

23 PAUSE || button and lamp

Press to stop the tape momentarily. To start the tape, press again. When this button is pressed during playback, a still picture will be obtained. If the PLAY ►, F FWD ►►, REW ◀◀ or search button is pressed during the pause mode, the pause mode will be released and the tape will run in the mode designated by the button pressed.

Dial menu buttons

The dial menu buttons 24, 25 and 26 are used only when the COUNTER/TC/DIAL MENU selector 5 is set to DIAL MENU.

24 MENU button

While pressing this button, turn the search dial 13 in jog mode to select the menu.

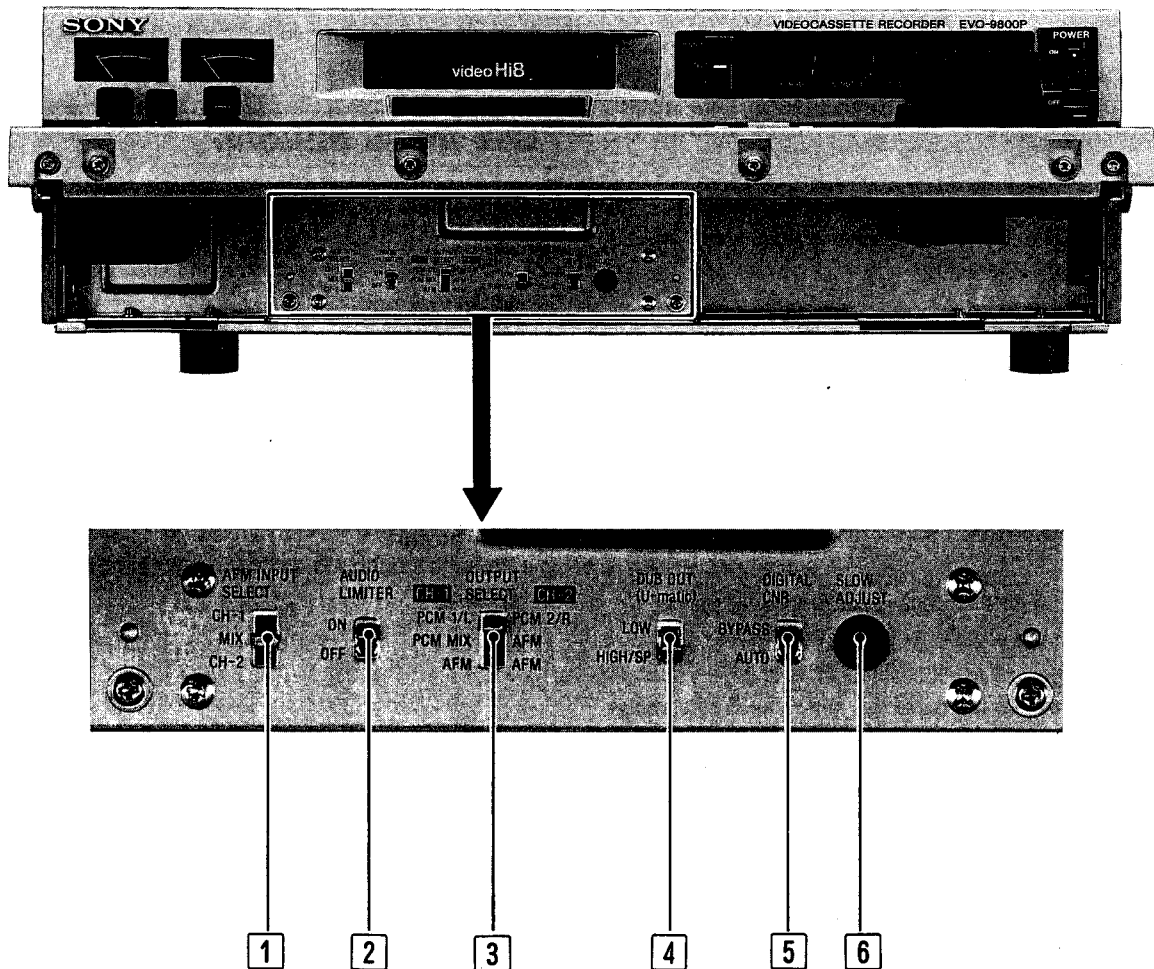
25 DATA button

While pressing this button, turn the search dial 13 in jog mode to set the data.

26 SET button

Press this button to settle the data set by the DATA button 26.

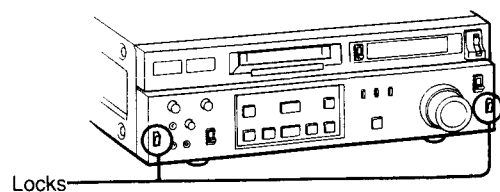
(SUB-PANEL)



Opening and positioning the control panel

To change the setting of the switches on the sub-panel inside the control panel, open the control panel as illustrated. The control panel can be tilted upwards by 30°, 60° or 90° for convenience.

- 1 Push down the locks on the both sides simultaneously so that the lower half of the front panel comes to the front.
- 2 Tilt the panel up and lock it at the desired angle of 30°, 60° or 90°. Be sure to check that both sides are locked firmly.



1 AFM INPUT SELECT switch

Selects the sound for AFM recording.

| | |
|-------------|--|
| CH-1 | To record the sound connected to the AUDIO LINE IN CH-1/L connector. |
| MIX | To record the mixed sound connected to the AUDIO LINE IN CH-1/L and CH-2/R connectors. |
| CH-2 | To record the sound connected to the AUDIO LINE IN CH-2/R connector. |

2 AUDIO LIMITER switch

| | |
|------------|--|
| ON | The audio recording limiter circuit is activated to minimize sudden surges of input signals and perform recording with low sound distortion. For microphone recording, use this setting. |
| OFF | The limiter circuit is deactivated, enabling a manual recording level adjustment. |

3 OUTPUT SELECT switch

Selects the sound output from the AUDIO LINE OUT CH-1/L and CH-2/R connectors.

| Setting | | Output | |
|----------------|----------------|--|---|
| CH-1 | CH-2 | CH-1/L connector | CH-2/R connector |
| PCM 1/L | PCM 2/R | The sound recorded on the PCM channel 1 | The sound recorded on the PCM channel 2 |
| PCM MIX | AFM | The mixed sound recorded on the PCM channels 1 and 2 | The sound recorded in AFM |
| AFM | AFM | The sound recorded in AFM | |

4 DUB OUT (U-matic) selector

Sets according to the recording type of the U-matic recorder connected to the DUB OUT (U-matic) connector.

| | |
|----------------|--|
| LOW | When a U-matic VTR for recording in low-band mode is connected. |
| HIGH/SP | When a U-matic VTR for recording in high-band mode or an SP system U-matic VTR is connected. |

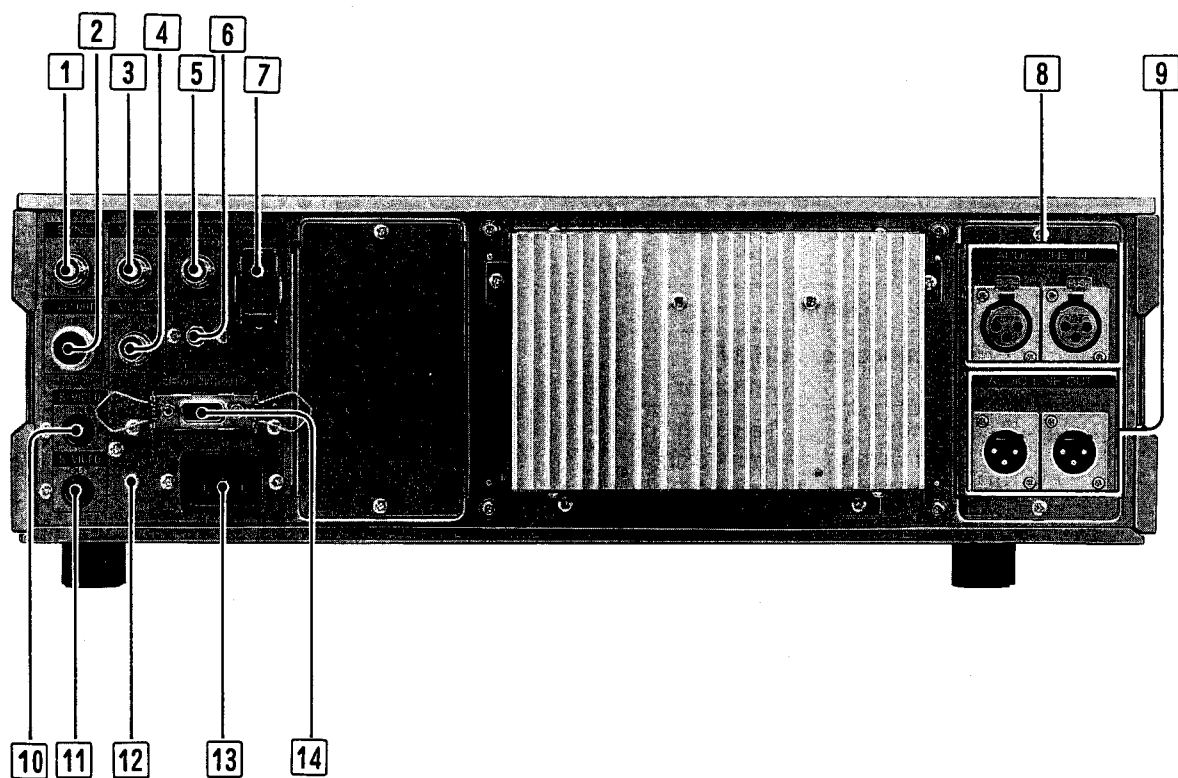
5 DIGITAL C.N.R. (Chroma Noise Reducer) switch

| | |
|---------------|---|
| BYPASS | The video signal bypasses the built-in digital noise reducer. |
| AUTO | During playback, the video signal automatically passes the chroma noise reducer. Normally use this setting. |

6 SLOW ADJUST (slow-motion picture adjustment) control

Normally keep this control at the center click position. If streaks or snow appear during slow-motion playback, turn this control so that the best possible picture is obtained.

(REAR PANEL)



1 SYNC IN (sync signal input) connector (BNC type)
Accepts an external reference video signal to operate the unit in synchronization with an external device.

2 DUB OUT U-matic (dubbing output for U-matic VTR) connector (7-pin)
Use to supply the video signal to be dubbed to a U-matic VTR. Connect to the dub input connector of the U-matic VTR using the 7-pin dubbing cable (optional).
(Be sure to set the DIGITAL C.N.R. switch to AUTO.)

3 VIDEO IN (video input) connector (BNC type)
Supply a composite video signal to this connector.

4 VIDEO OUT connector (BNC type)
Supplies a composite video signal.

5 MONITOR VIDEO connector (BNC type)
This outputs the video signal for monitoring. Connect to the video input connector of a color monitor. Information superimposed on a picture in the dial menu operation mode will also be output.

6 MONITOR AUDIO connector (phono jack)
Supplies an audio signal selected by the MONITOR OUT switch on the front panel.

7 MONITOR TV connector (8-pin connector)
Accepts a video monitor having an 8-pin VTR connector. Both the MONITOR VIDEO, and MONITOR AUDIO connections can be replaced with a single cable connection here. In playback, the channel selected by the MONITOR OUT switch will be heard through the speaker on the video monitor.
• The data of the dial menu is superimposed on the video signal and output.

8 AUDIO LINE IN CH-1/L and CH-2/R connectors (XLR 3-pin, female)

9 AUDIO LINE OUT CH-1/L and CH-2/R connectors (XLR 3-pin, male)

10 S-VIDEO IN connector (4-pin)
Supply an S-VIDEO signal to this connector. When the 4-pin connector is inserted here, the signal supplied to this connector has priority over the signal connected to the VIDEO IN connector (BNC type).

11 S-VIDEO OUT connector (4-pin)
Supplies an S-VIDEO signal.

12 Ground terminal

13 AC IN (power inlet)
Plug in the supplied AC power cord to supply power to the EVO-9800P.

14 REMOTE 1 (9P) connector (9-pin)
Connect a Sony editing control unit such as an RM-450CE to perform editing.
Use the 9-pin remote control cable (optional) to make the connection.

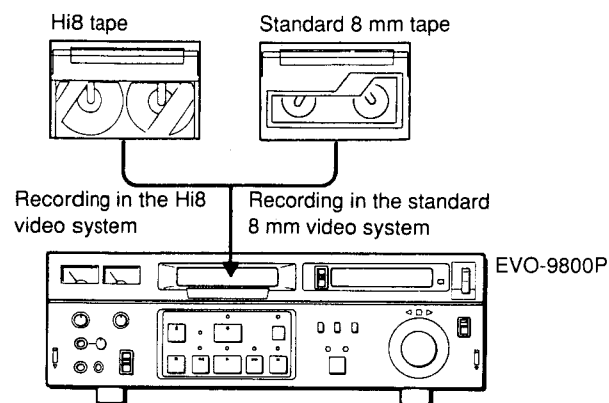
1-3. NOTES ON VIDEO CASSETTE

Cassette Tape Being Used and Automatic Switching

• recording mode

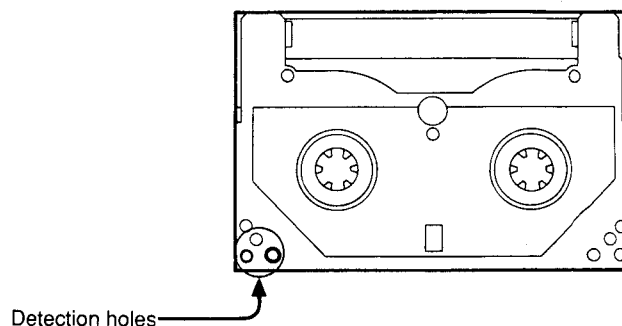
When using a Hi8 cassette tape for recording, the VTR senses the detection holes on the cassette shell (see below), and automatically performs the recording in the SP (standard play) mode of Hi8 video system.

When using a standard 8 mm tape, the recording is performed in the standard 8 mm video system.

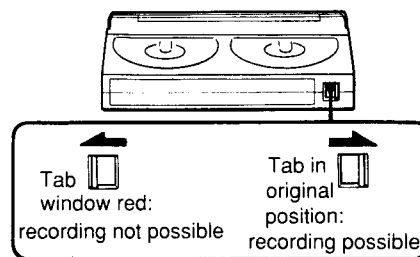


Hi8 Cassette Tape

This new Hi8 tape with high durability was specially developed for Hi8 video system recording/playback and features characteristics best suiting the Hi8 video system. Hi8 cassettes have a detection hole on the bottom of the cassette shell to automatically set Hi8 VTRs in the Hi8 video system recording.



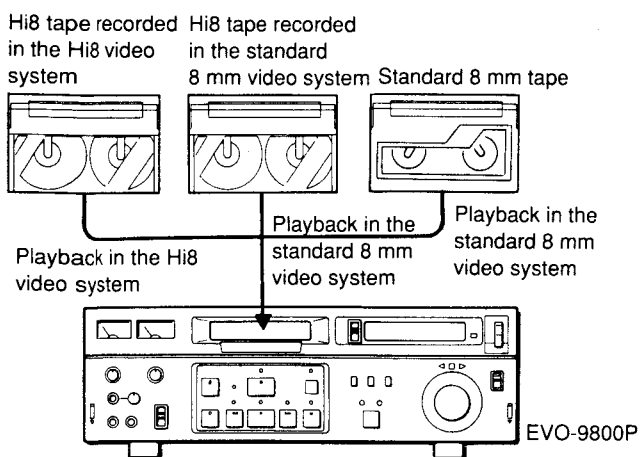
Record prevent Tab



• playback mode

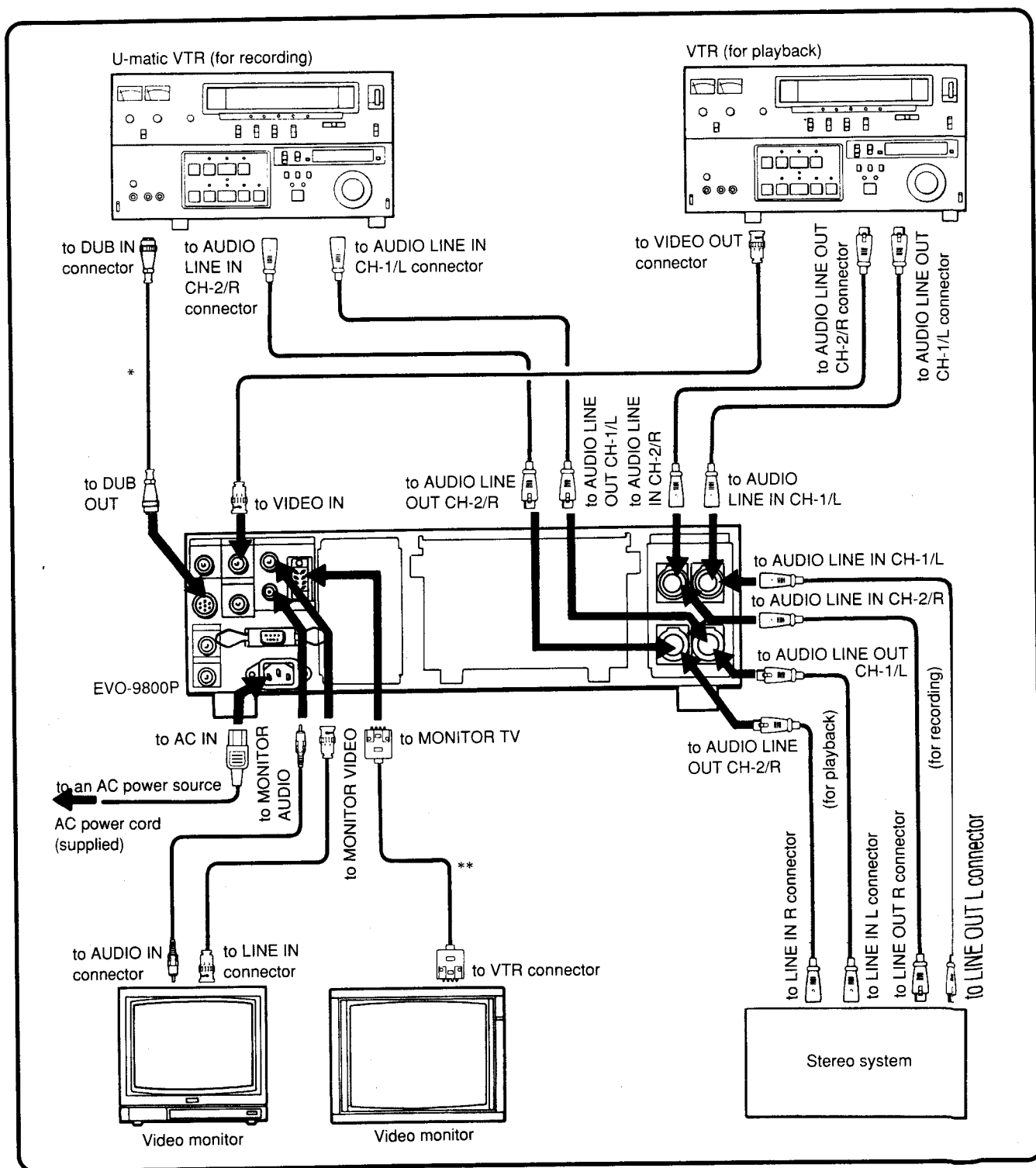
In playback, the VTR can detect the system mode used in recording by verifying the recorded signal, and plays back the tape in the appropriate mode.

- The Hi8 indicator on the front panel lights when a tape recorded in the Hi8 video system is played back.



1-4. CONNECTIONS

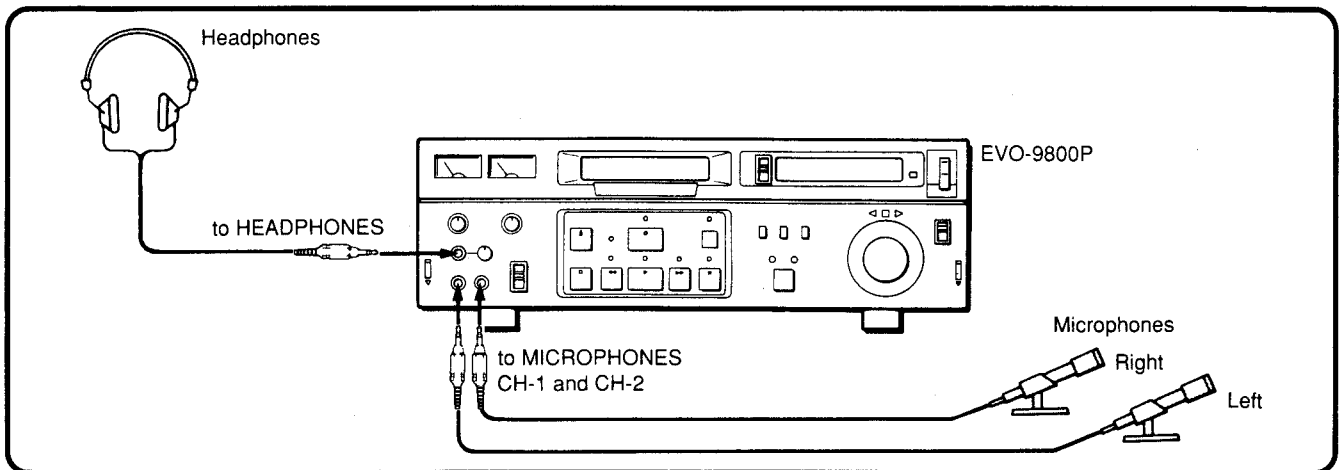
1-4-1. Basic Connections



* Dubbing cable VDC-5. When the VTR is not equipped with the DUB connector, use the VIDEO OUT connector on the EVO-9800P for connecting a video output signal using a cable with BNC connectors.

** Use a VMC-3P, VMC-5P or VMC-10P monitor connecting cable.

1-4-2. Connections of Headphones and Microphones



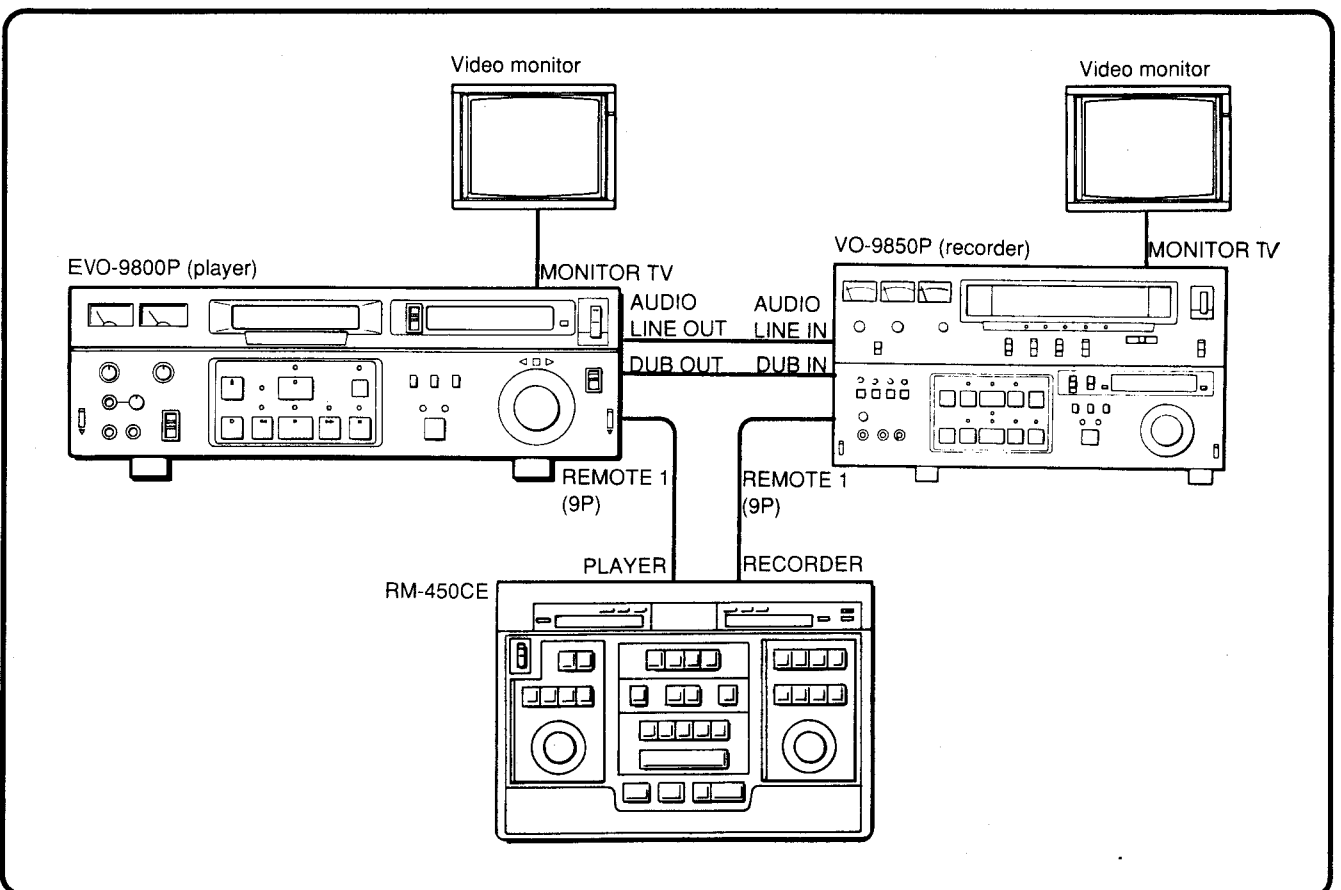
Note

When the microphones are connected, the signals connected to the AUDIO LINE IN connectors on the rear panel are automatically cut off, and signals from the microphones will be recorded.

1-5. EDITING

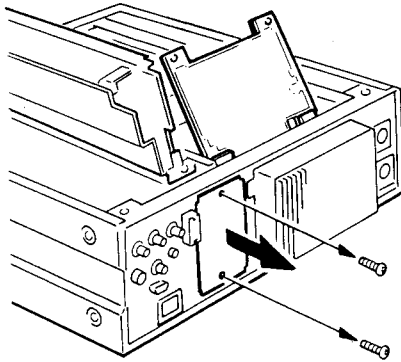
The EVO-9800P can be used as a player of an automatic editing system composed of the editing control unit, U-matic VTR for recording, video monitors, etc. Then the program recorded by a video camcorder can be edited.

An example of an editing system is introduced here. For details on connections and operations, refer to the instruction manual supplied to the editing control unit or VTR.

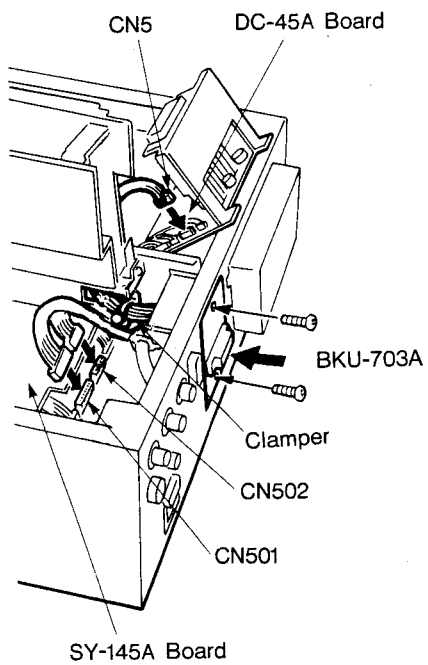


1-6. INSTALLATION OF BKU-703A (33P) EDITING INTERFACE

Remove the Blank Panel as shown in the figure.



Install the BKU-703A as shown in the figure.



About details, please refer to operation manual of BKU-703A.

1-7. RACK MOUNTING

The RMM-980 (option) is prepared for mounting the EVO-9800P in a rack.

SECTION 2 SERVICE INFORMATION

2-1. REMOVAL AND INSTALLATION OF THE CABINET

Front Panel

1. Remove the Top Panel and Side Panels. Remove the four fixing screws.
2. Remove the Front Panel, while releasing the each claw of the left and right side. (fig.1)
3. When installing the Front Panel, press it in the direction of the arrows and put the two grooves of the Front Panel to the shafts as shown in the figure.

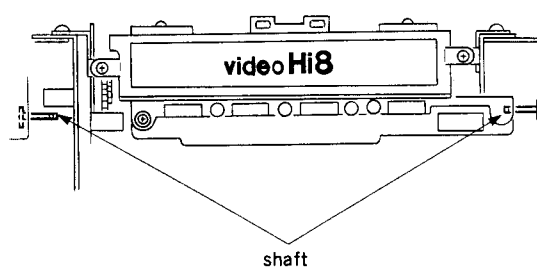


Fig. 2

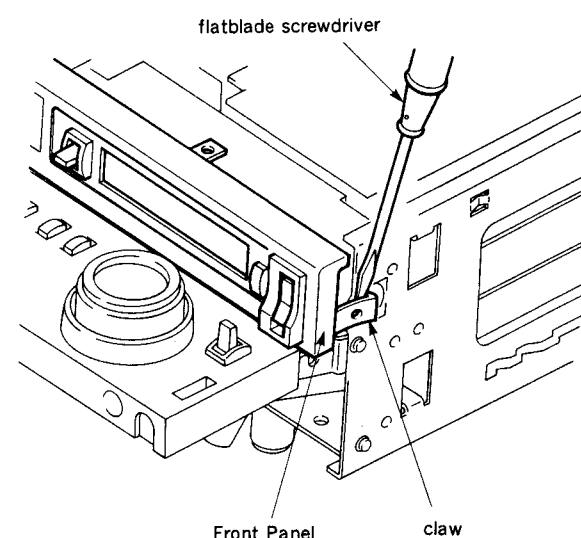


Fig. 1

Key Panel

1. While pushing down the right and left levers on the front of the Key Panel, open the panel at a 90 degrees angle.
2. Remove the Dial Knob from the Key Panel. (fig.3)
 - (1) Remove the Dial Knob Rubber and the Knob Plate from the Dial Knob.
 - (2) Remove the fixing screw and remove the Dial Knob from the Key Panel.
3. Remove the three Control Knobs from the Key Panel.
4. Remove the four fixing screws. Reverse the Key Panel at a 30 degrees angle and remove it from the unit.
5. When installing the Key Panel, press it in the direction of the arrows and put the two grooves of the Front Panel into the shafts of the Key Panel Chassis.

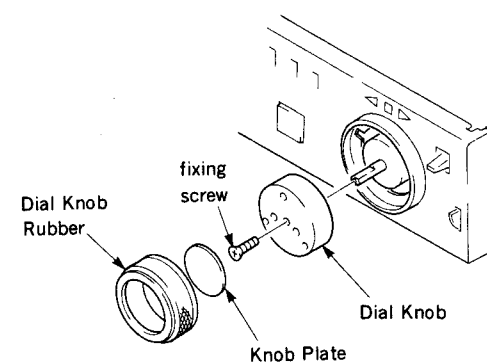


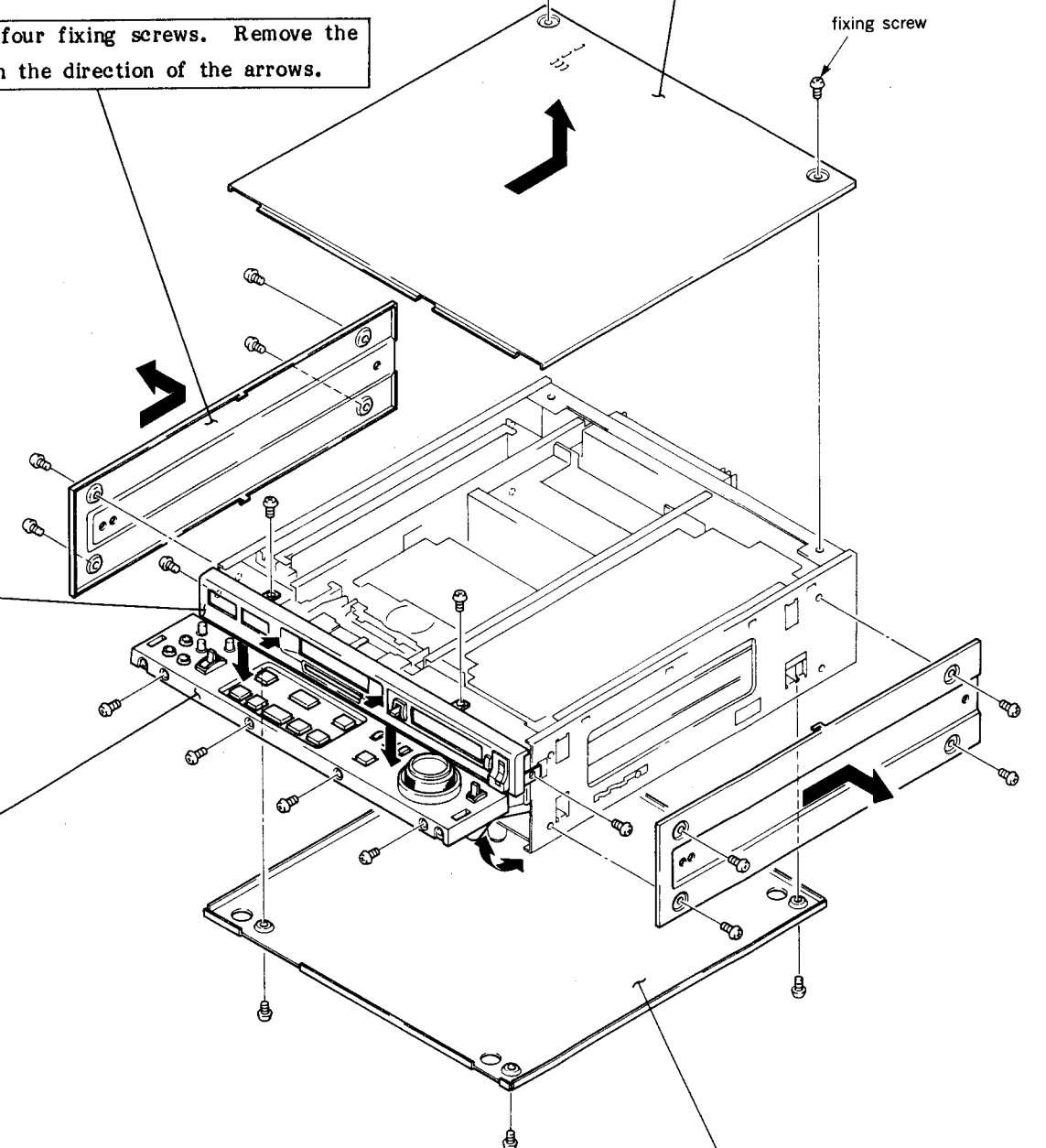
Fig. 3

Side Panel

Remove the four fixing screws. Remove the Side Panel in the direction of the arrows.

Top Panel

Remove the two fixing screws. Remove the Top Panel in the direction of the arrows.

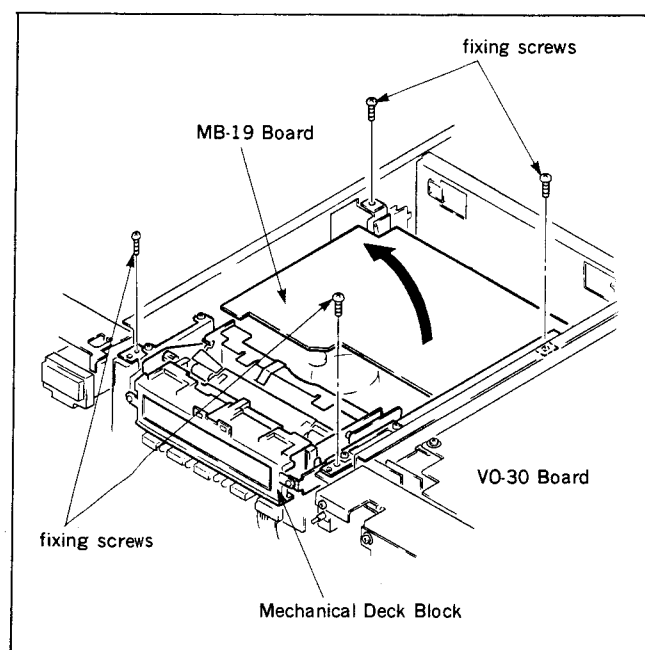


Bottom Plate

Remove the four fixing screws and remove the Bottom Plate.

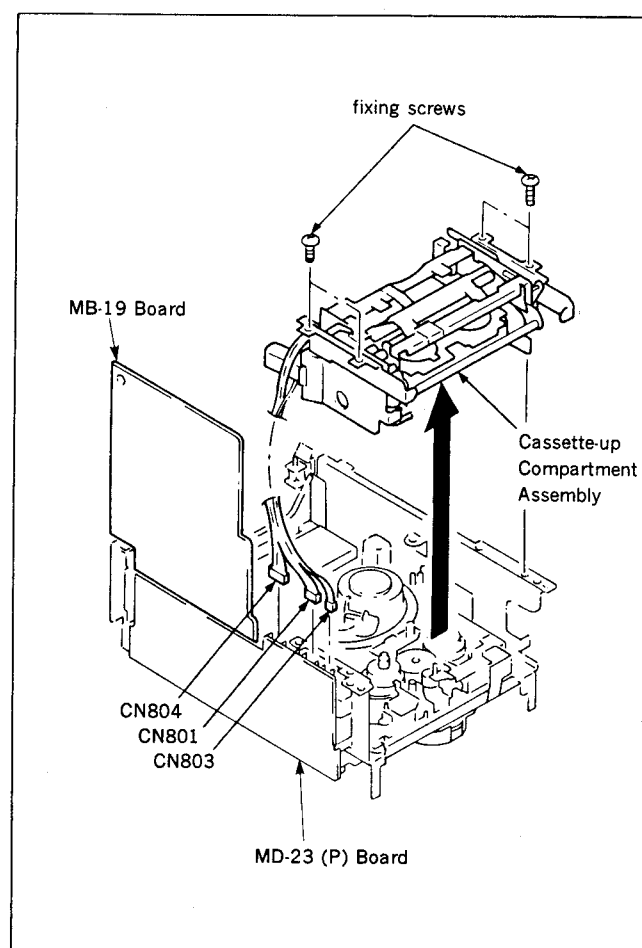
2-2. REMOVAL OF THE MECHA DECK BLOCK

1. Disconnect the connectors (CN902, 903, 904) on the SE-10(P) Board from the bottom side of the unit.
2. Remove the two fixing screws from the top of the unit. Release the claw of the PC holder and open the MB-19 Board.
3. Disconnect the connectors (CN911, 912, 913) on the HK-5 Board and the connectors (CN905, 907) on the SE-10(P) Board.
4. Disconnect the connectors (CN923, 924) on the MB-19 Board.
5. Open the VO-30 Board and disconnect the CN555 (Condensation Sensor) on the DI-12 Board.
6. Remove the four fixing screws as shown in the figure and remove the Mechanical Deck Block from the unit.



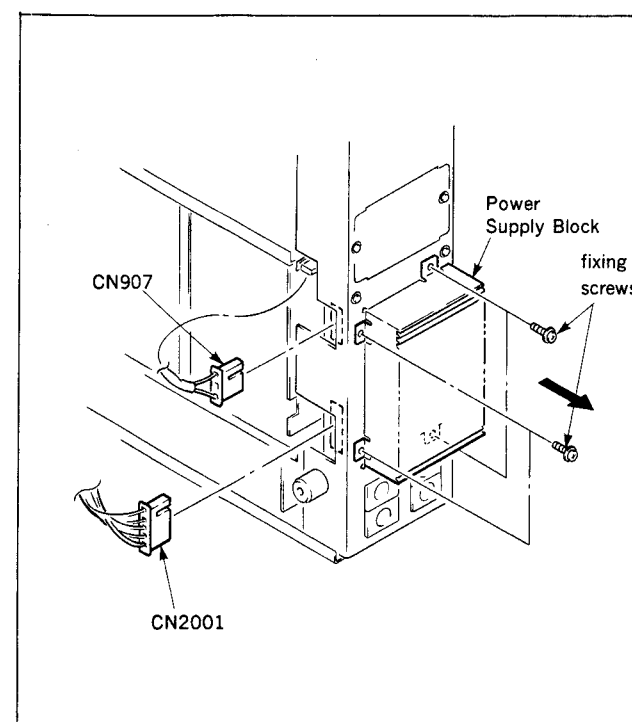
2-3. REMOVAL OF THE CASSETTE-UP COMPARTMENT ASSEMBLY

1. Remove the two fixing screws. Release the claw of the PC holder and open the MB-19 Board.
2. Disconnect the connectors (CN801, 803, 804) on the MD-23(P) Board.
3. Remove the four fixing screws and remove the Cassette-up Compartment Assembly in the direction of the arrow.



2-4. REMOVAL OF THE POWER SUPPLY BLOCK

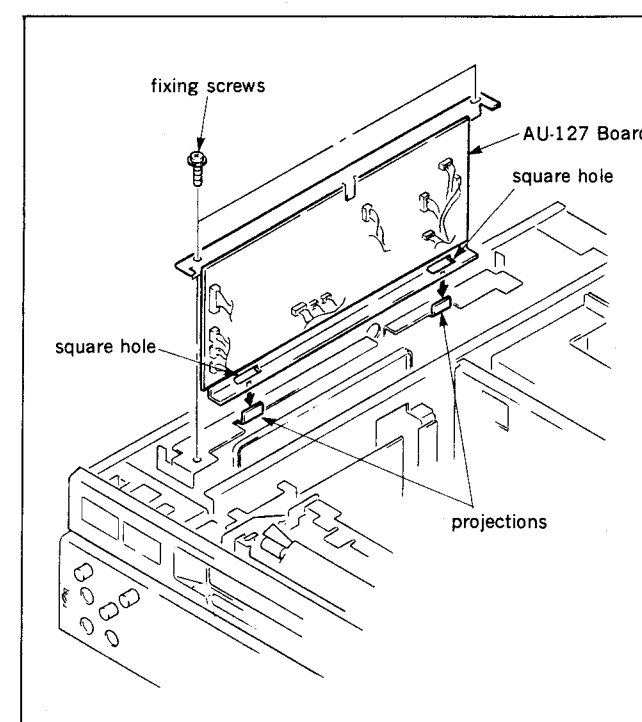
1. Remove the Bottom Plate.
2. Disconnect the connector (CN907) of the Power Switch.
3. Disconnect the connector (CN2001) of the DC-45A Board.
4. Remove the four fixing screws and remove the Power Supply Block from the unit.



2-5. SERVICE OF THE PRINTED CIRCUIT BOARDS

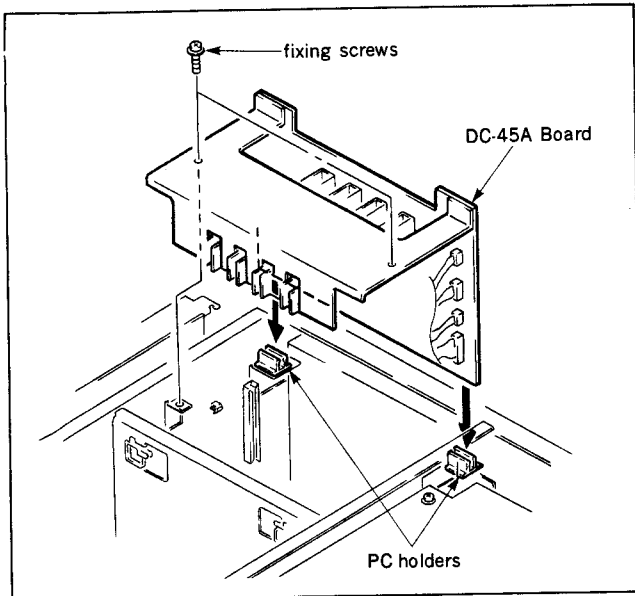
2-5-1. Servicing the AU-127 Board

1. Remove the two fixing screws as shown in the figure and pull out the AU-127 Board from the unit.
2. Insert the two square holes into the two projections of the chassis and stand the AU-127 Board.



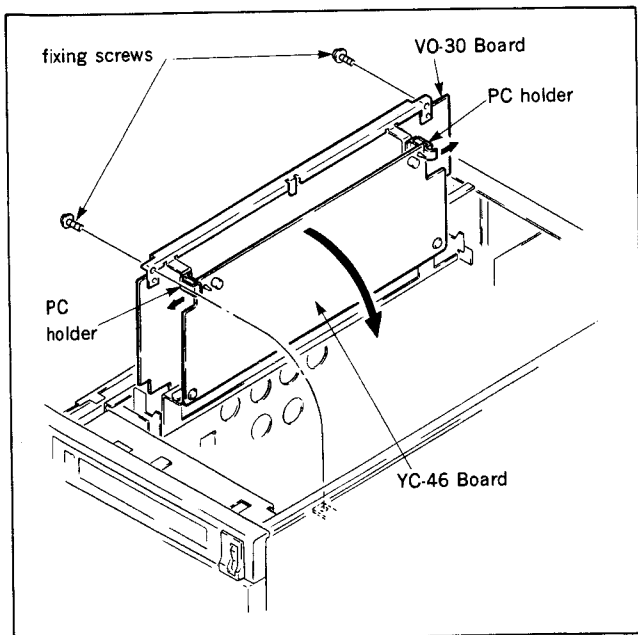
2-5-2. Servicing the DC-45A Board

1. Remove the two fixing screws and pull out the DC-45A Board from the unit as shown in the figure.
2. Insert the DC-45A Board into the two PC holders and stand it.



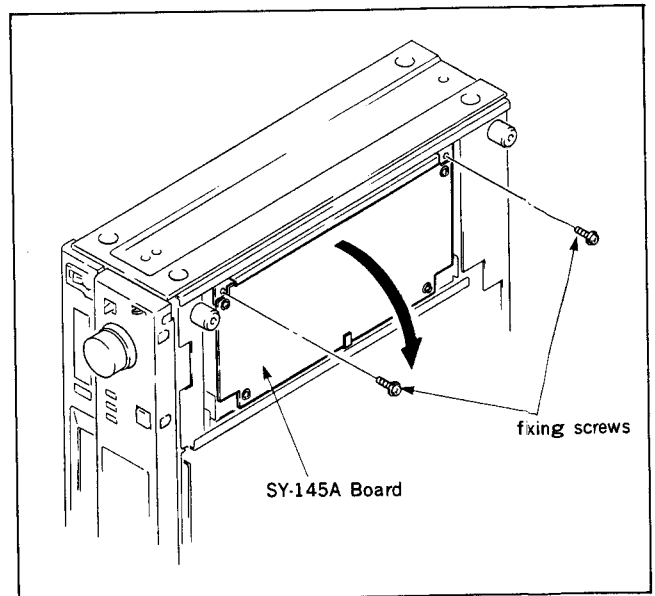
2-5-3. Opening the VO-30 and YC-46 Boards

1. Remove the two fixing screws and open the VO-30 Board.
2. Release the two claws of the PC holder and open the YC-46 Board.



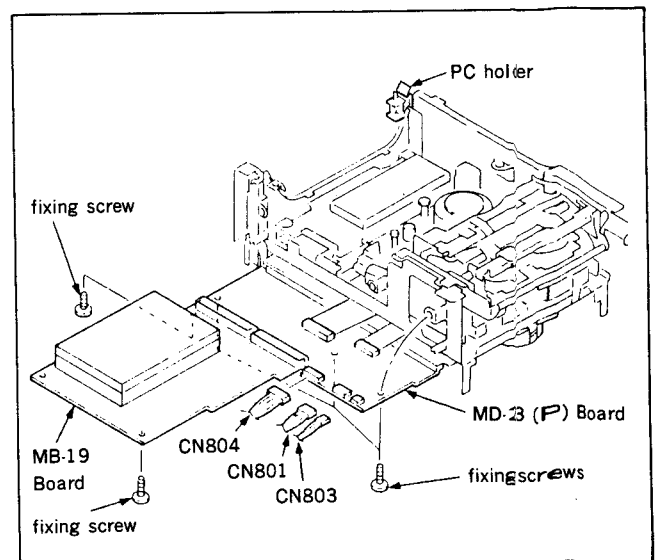
2-5-4. Opening the SY-145A Board

1. Place the unit on the left side down. Remove the Bottom Plate.
2. Remove the two fixing screws and open the SY-145A Board as shown in the figure.



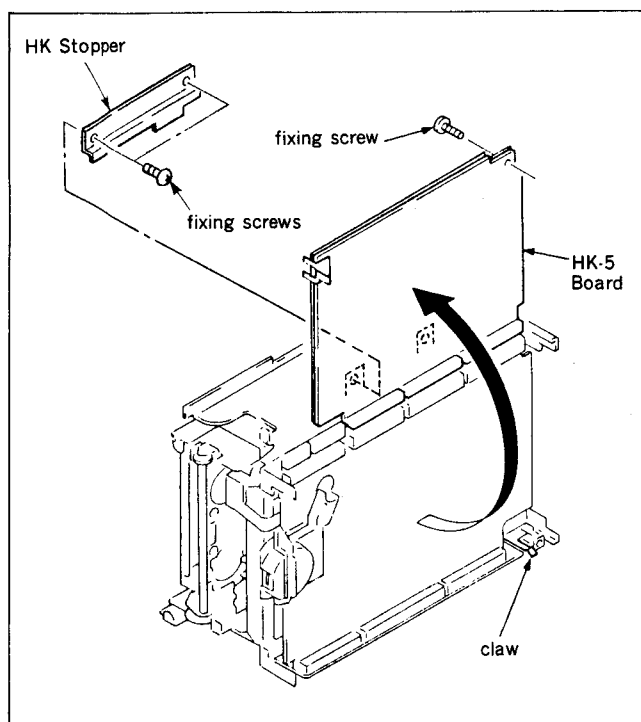
2-5-5. Opening the MB-19 and MD-23(P) Boards

1. Remove the two fixing screws. Release the claw of the PC holder and open the MB-19 Board.
2. Disconnect the connectors (CN801, 803, 804) on the MD-23(P) Board.
3. Remove the three fixing screws and open the MD-23(P) Board.



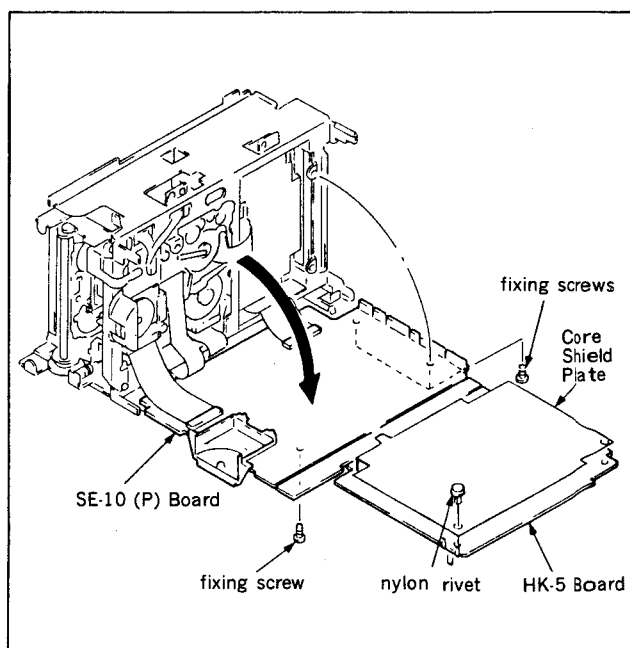
2-5-6. Opening the HK-5 Board

1. Remove the two fixing screws and remove the HK Stopper.
2. Remove the fixing screw of the HK-5 Board.
3. Release the claw as shown in the figure and open the HK-5 Board in the direction of the arrow.



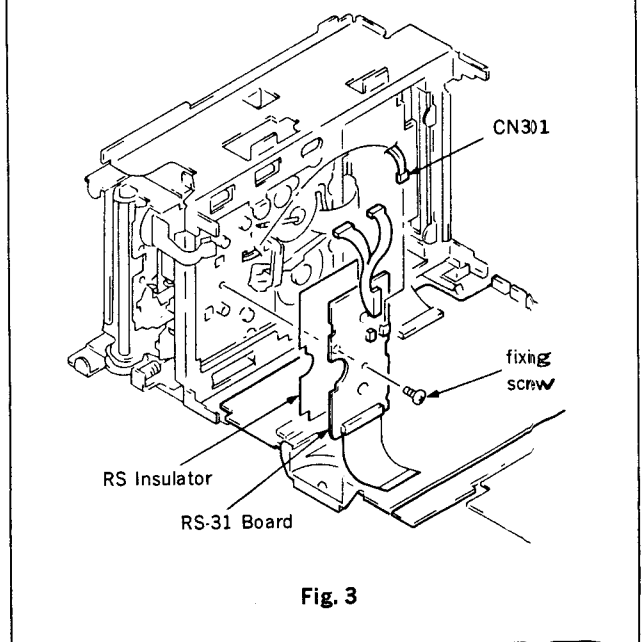
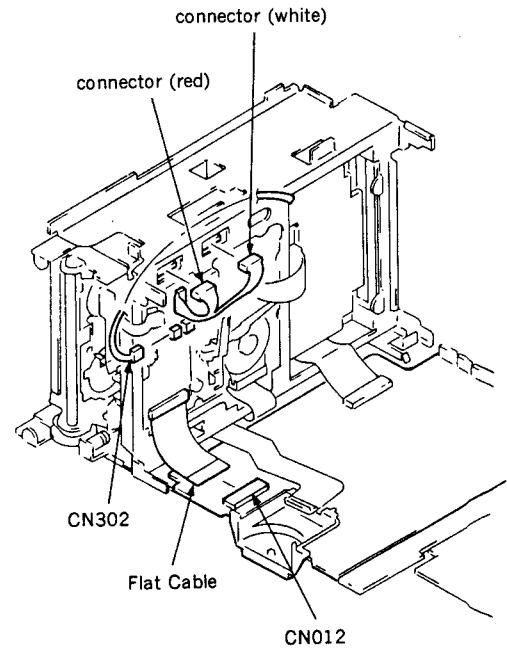
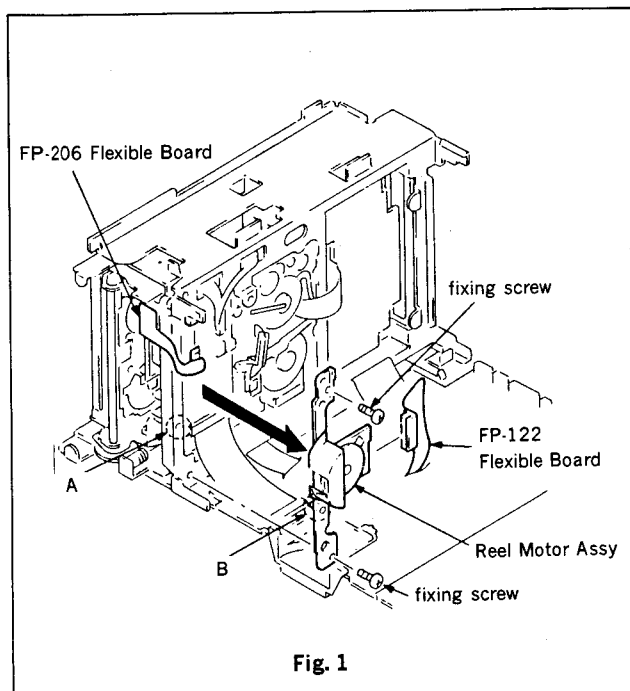
2-5-7. Opening the SE-10(P) Board

1. Open the HK-5 Board as described in Section 2-5-6.
2. Remove the nylon rivet and remove the Core Shield Plate.
3. Remove the three fixing screws of the SE-10(P) Board.
4. Open the SE-10(P) Board in the direction of the arrow.



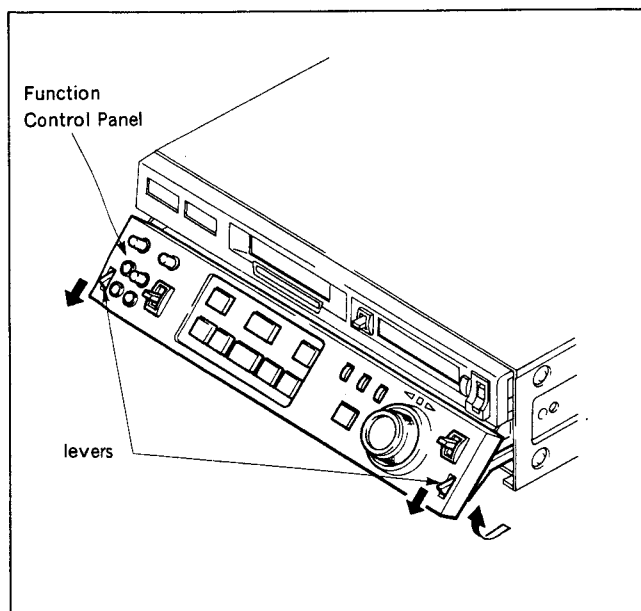
2-5-8. Removal of the RS-31 Board

1. Disconnect the FP-122 Flexible Board.
2. Disconnect the FP-206 Flexible Board.
3. Remove the two fixing screws of the Reel Motor Assembly.
4. Insert a flatblade screwdriver into "A". Disconnect protrusion "B".
5. Remove the Reel Motor Ass'y in the direction of the arrow. (fig. 1)
6. Disconnect the connector (CN302) on the RS-31 Board.
7. Disconnect the two connectors (MS-4 Board, red), (LS-9 Board, white).
8. Disconnect the Flat Cable from the connector (CN012) on the SE-10(P) Board. (fig. 2)
9. Disconnect the connector (CN301) on the RS-31 Board.
10. Remove the fixing screw of the RS-31 Board.
11. Remove the RS-31 Board and RS Insulator. (fig. 3)



2-6. FUNCTION CONTROL PANEL POSITIONING

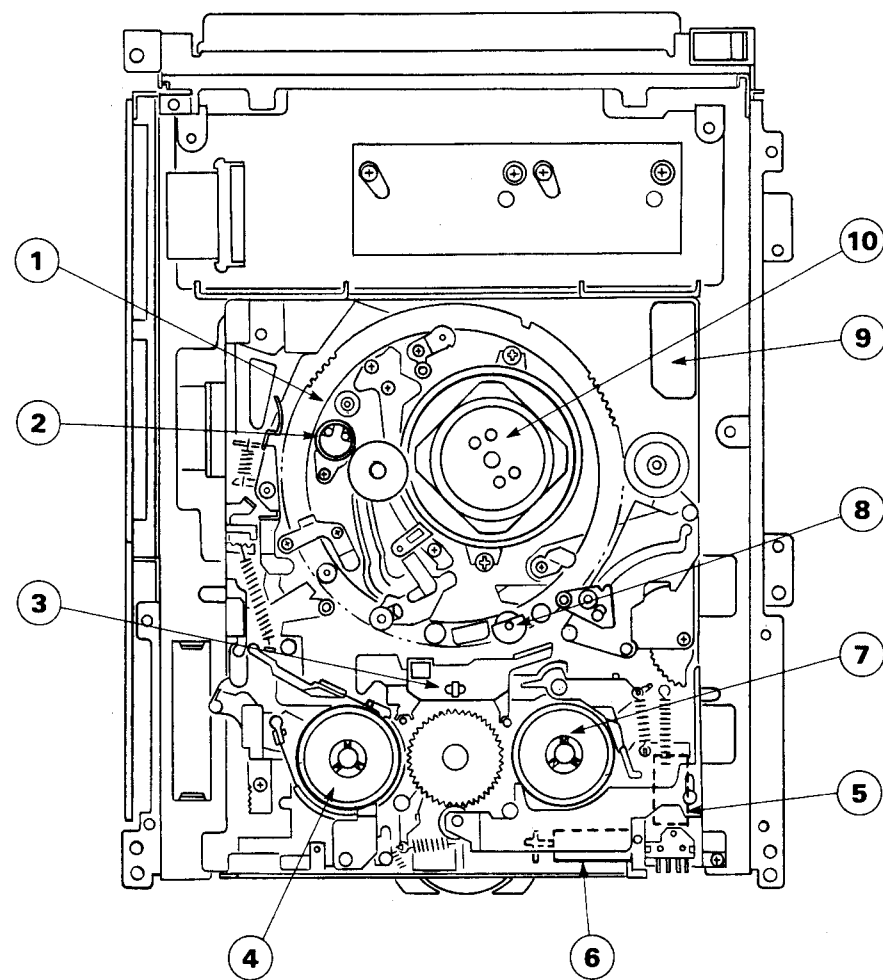
Open the Function Control Panel, while pushing down the left and right levers on the front of the panel. Open the panel at a 90 degrees and it is possible to operate the switches on the sub-panel. Opening angle of the panel can be adjusted to 30, 60, and 90 degrees respectively.



2-7. LOCATION OF MAIN PARTS

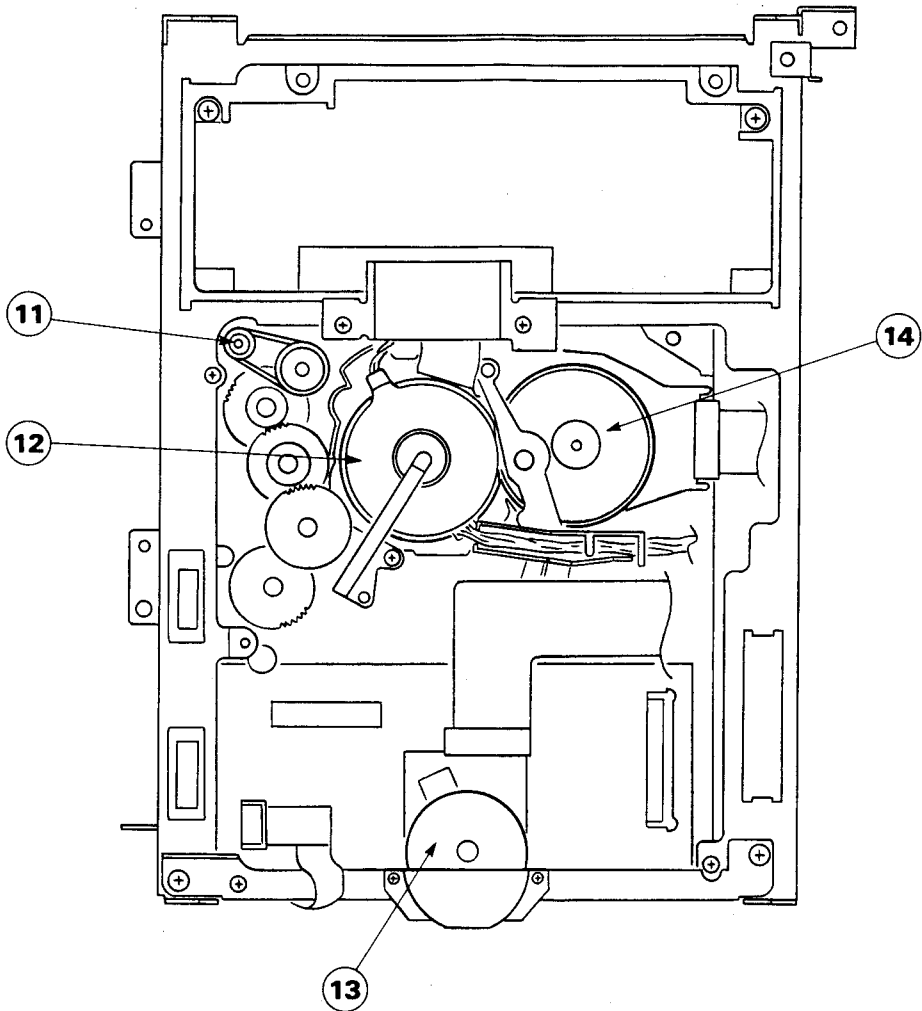
2-7-1. Location of the Main Mechanical Parts/Components

TOP VIEW



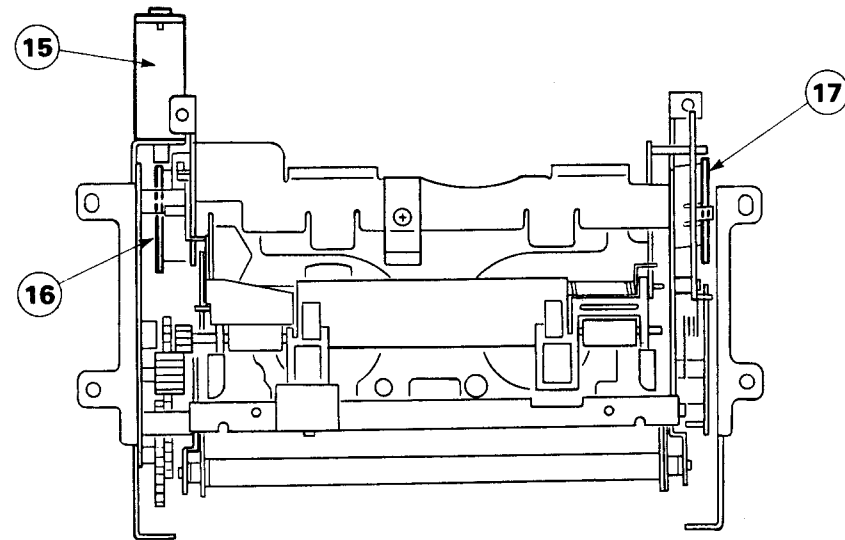
- | | |
|---------------------|-----------------------------|
| ① Threading Ring | ⑥ Brake Plunger Solenoid |
| ② Capstan Shaft | ⑦ Take-up Reel Table |
| ③ Tape Top/End LED | ⑧ Pinch Roller Arm Assembly |
| ④ Supply Reel Table | ⑨ Threading Motor |
| ⑤ Control Motor | ⑩ Drum |

BOTTOM VIEW

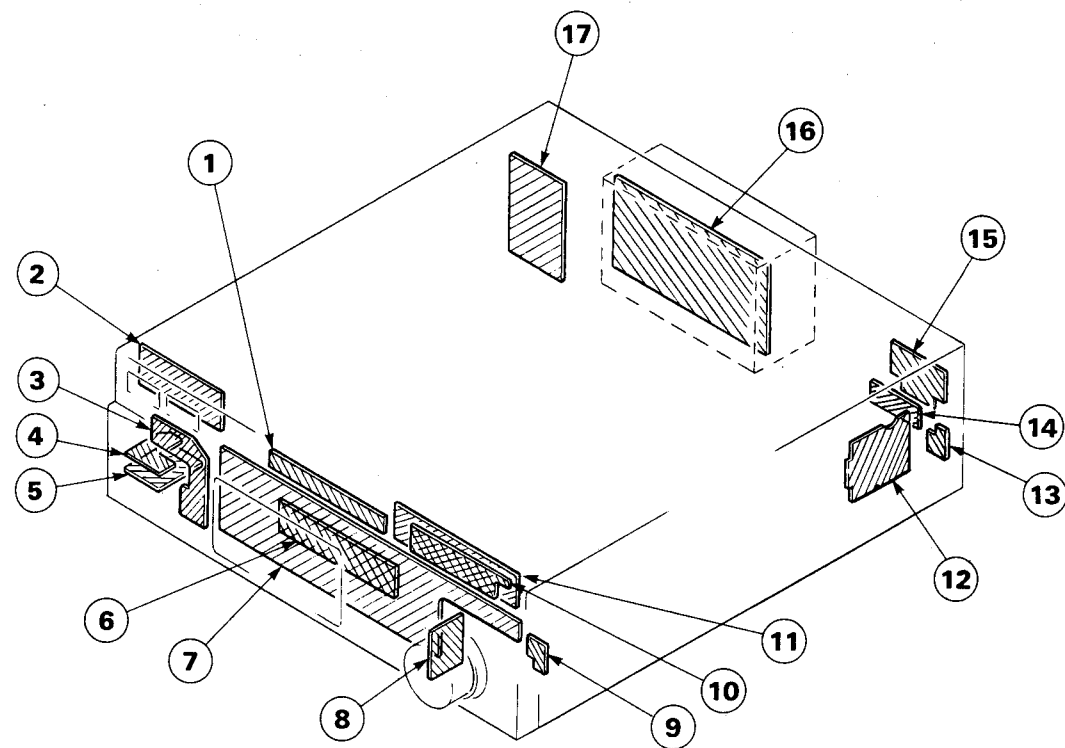


- | |
|-------------------|
| ⑪ Threading Motor |
| ⑫ Drum |
| ⑬ Reel Motor |
| ⑭ Capstan Motor |

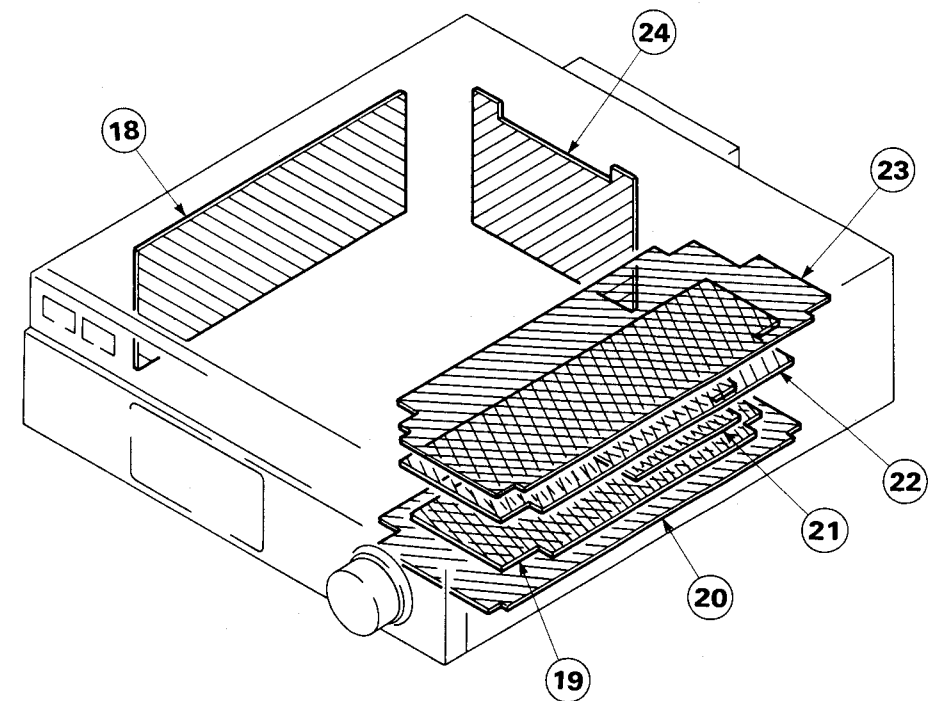
CASSETTE-UP COMPARTMENT
TOP VIEW



- ⑮ Cassette Loading Motor
- ⑯ Tape End Sensor
- ⑰ Tape Top Sensor

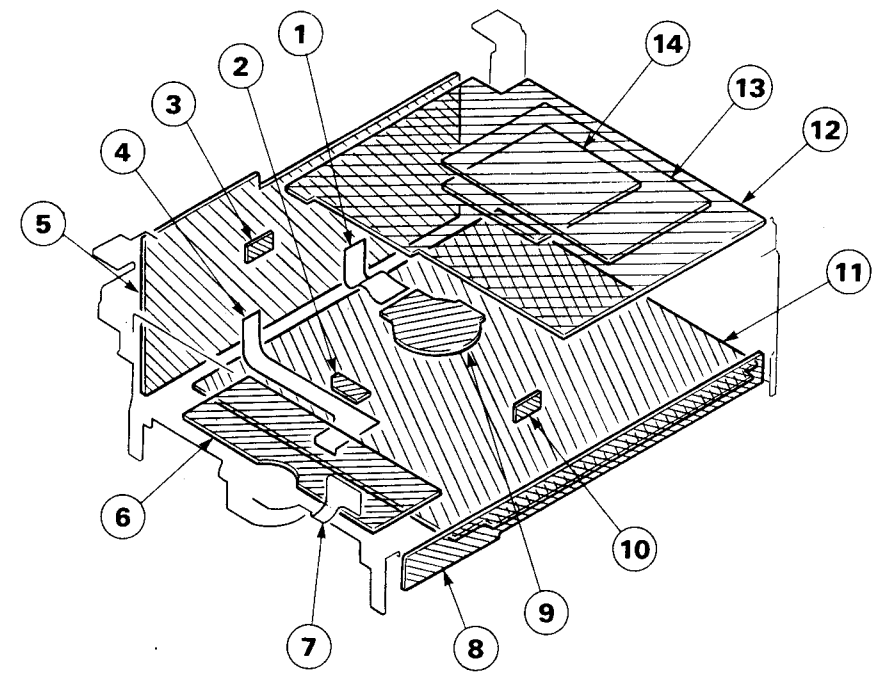


- | | |
|-----------------|--------------------------------|
| ① LP-52 Board | ⑩ DP-101 Board |
| ② MT-57 Board | ⑪ DD-12 Board |
| ③ SW-346 Board | ⑫ AC-89 Board |
| ④ HP-42 Board | ⑬ CP-162 Board |
| ⑤ MC-28 Board | ⑭ RM-88 Board |
| ⑥ SW-347A Board | ⑮ CP-141 Board |
| ⑦ KY-162 Board | ⑯ Switching Regulator (UR-14E) |
| ⑧ PTC-32 Board | ⑰ AA-16 Board |
| ⑨ SW-348 Board | |

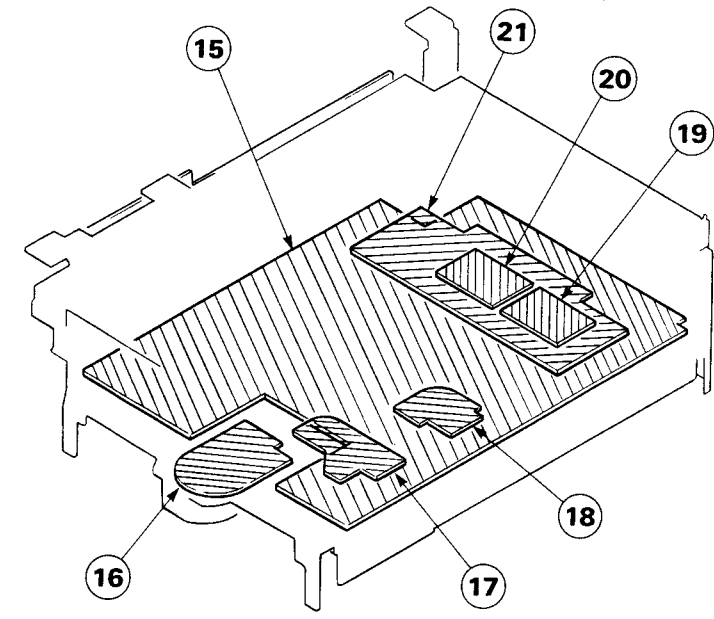


- | |
|-----------------|
| ⑱ AU-127 Board |
| ⑲ DI-12 Board |
| ⑳ SY-145A Board |
| ㉑ DI-13 Board |
| ㉒ YC-46 Board |
| ㉓ VO-30 Board |
| ㉔ DC-45A Board |

MECHANICAL DECK



- | | |
|--|--|
| ① FP-84 Flexible Board | ⑧ IG-4 Board |
| ② LD-1 Board | ⑨ Capstan Motor Board |
| ③ TS-74 (L) Board (Cassette-up Compartment) | ⑩ TS-74 (R) Board (Cassette-up Compartment) |
| ④ FP-122 Flexible Board | ⑪ HK-5 Board |
| ⑤ MD-23(P) Board | ⑫ MB-19 Board |
| ⑥ RS-31 Board | ⑬ PD-19 Board |
| ⑦ FP-206 Flexible Board | ⑭ PA-27 Board |



- | |
|---------------------|
| ⑮ SE-10(P) Board |
| ⑯ Reel Motor Board |
| ⑰ MS-4 Board |
| ⑱ LS-9 Board |
| ⑲ RP-103 Board (SP) |
| ⑳ RP-73 Board (LP) |
| ㉑ FR-43 Board |

2-8. PRINTED CIRCUIT BOARDS

The circuit information is provided below.

| SYSTEM | BOARD | CIRCUIT FUNCTION |
|-----------------|---------|-------------------------------------|
| VIDEO | YC-46 | YC Separator |
| | VO-30 | Video Interface |
| AUDIO | AU-127 | Audio Input/Output Amp |
| | AA-16 | XLR Input/Output Amp |
| SYSCON | SY-145A | System Control |
| | KY-162 | Function Key Board |
| | DP-101 | Display |
| | DD-12 | Display Drive |
| | PTC-32 | Search Dial |
| DIGITAL PROCESS | DI-12 | Digital CNR |
| | DI-13 | Read Timing Control Pulse Generator |
| POWER | AC-89 | AC Input |
| | DC-45A | DC Supply |
| Others | LP-52 | Mode Display |
| | CP-141 | Connector Panel |
| | SW-346 | Audio Level Control |
| | SW-347A | Audio select SW |
| | SW-348 | Remote Panel SW |
| | MC-28 | Mic. Jack |
| | HP-42 | Head phones Level |
| | MT-57 | Audio Meter Level |
| | RM-83 | 9-pin Connector |
| | CP-162 | S Connector IN-OUT |

Mechanical deck

| SYSTEM | BOARD | CIRCUIT FUNCTION |
|-----------------|-----------|-----------------------|
| VIDEO | FR-43 | Head Amp/Flying Erase |
| | HK-5 | Y/C Video process |
| | RP-73 | REC/PB Head Amp (LP) |
| | RP-103 | REC/PB Head Amp (SP) |
| AUDIO | MB-19 | PCM Audio |
| | PA-27 | PCM Audio Analog |
| | PD-19 | PCM Audio Digital |
| SYSCON SERVO | TS-74 | Tape Top/End Sensor |
| | IG-4 | Terminal |
| | LD-1 | Tape Sensor |
| | MS-4 | Mode Switch |
| | LS-9 | Loading Switch |
| | RS-31 | Mechanism Control |
| | MD-23 (P) | Capstan/Drum Drive |
| Others | SE-10 (P) | Servo, Syscon |
| | FP-84 | Connection |
| | FP-206 | Connection |
| | FP-122 | Connection |

2-9. CONNECTORS

When external cables are connected to the various connectors on the connector panel during maintenance, the hardware listed below (or equivalents) must be used.

| PANEL INDICATION | CONNECTOR |
|---|---|
| VIDEO IN VIDEO OUT SYNC IN MONITOR VIDEO | 1-560-069-11 PLUG, BNC, MALE |
| MONITOR AUDIO | 1-506-311-00 PLUG, PIN |
| DUB OUT | 1-508-948-00 PLUG, 7P, MALE |
| REMOTE(9P) | 1-560-651-00 PLUG, 9P, MALE and 1-561-749-00 JUNCTION SHELL, 9P |
| AUDIO LINE IN | 1-508-084-00 CONNECTOR, XLR, 3P, MALE |
| AUDIO LINE OUT | 1-508-083-00 CONNECTOR, XLR 3P, FEMALE |
| MONITOR TV | 1-506-161-00 CONNECTOR, 8P, MALE |
| S-VIDEO IN S-VIDEO OUT | S-VIDEO CONNECTOR CONNECTING CABLE (Option): YC-30V (3m) YC-15V (1.5m) |

2-10. CONNECTOR INPUT/OUTPUT SIGNAL

The connector INPUT/OUTPUT signals of the connector panel are as follows.

INPUT

| | |
|-----------------------------------|--|
| VIDEO IN | : 1.0 ± 0.3 Vp-p, 75 ohms, unbalanced, sync negative |
| SYNC IN | : 1 to 5 Vp-p, 75 ohms, unbalanced, sync negative |
| MIC IN (front panel) | : -60 dBu, more than 3k ohms (600 ohm microphone is usable.) unbalanced |
| AUDIO LINE IN (CH-1/L, CH-2/R) | : +4 dBu, more than 10k ohms (600 ohm possible), balanced |
| S-VIDEO IN | : Y : 1.0 ± 0.2 Vp-p, 75 ohms unbalanced, sync negative C : 0.3 ± 0.06 Vp-p, 75 ohms unbalanced |

OUTPUT

| | |
|---|--|
| VIDEO OUT | : 1.0 ± 0.2 Vp-p, 75 ohms, unbalanced, sync negative |
| (MONITOR VIDEO OUT : 1.0 ± 0.2 Vp-p, 75 ohms, TV-VIDEO OUT (8P) unbalanced, sync negative DUB OUT | |
| AUDIO LINE OUT (CH-1/L, CH-2/R) | : +4 dBu (at 600-ohm load), balanced |
| (MONITOR AUDIO OUT: -5 dBu (at 47k-ohm load), TV-AUDIO OUT (8P) unbalanced | |
| HEADPHONES OUT (front panel) | : -46 to -26 dBu (at 8-ohm load), adjustable, stereo |
| S-VIDEO OUT | : Y : 1.0 ± 0.2 Vp-p, 75 ohms unbalanced, sync negative C : 0.3 ± 0.06 Vp-p, 75 ohms unbalanced |

MONITOR

8P


| Pin | Output Signal |
|-----|-----------------------|
| 1 | AUDIO MONITOR OUT (X) |
| 2 | VIDEO OUT (X) |
| 3 | NC |
| 4 | NC |
| 5 | AUDIO MONITOR OUT (G) |
| 6 | VIDEO OUT (G) |
| 7 | NC |
| 8 | NC |

REMOTE CONTROL

REMOTE 1 (9P)

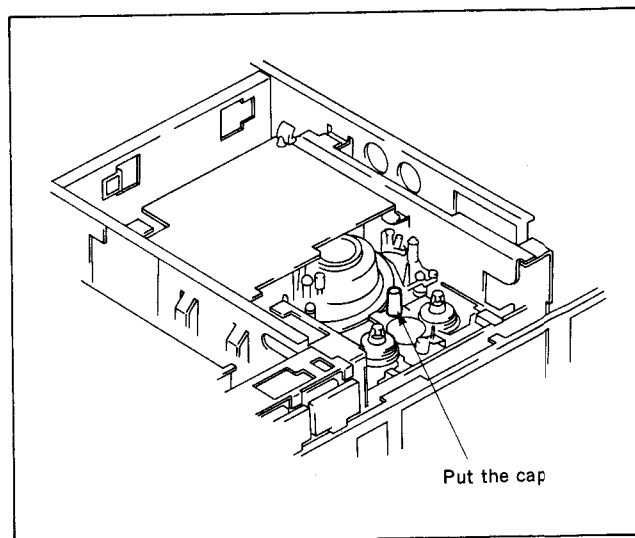
| Pin | I/O Signal | I/O |
|-----|-----------------|-----|
| 1 | FRAME GND | — |
| 2 | TRANSMIT A | O |
| 3 | RECEIVE B | I |
| 4 | RECEIVE COMMON | — |
| 5 | SPARE | — |
| 6 | TRANSMIT COMMON | — |
| 7 | TRANSMIT B | O |
| 8 | RECEIVE A | I |
| 9 | FRAME GND | — |

2-11. SPARE PARTS

- (1) The  -marked components are critical to safety. Replace only with same components as specified.
- (2) Replacement parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to accommodating the improved parts and/or engineering changes or standardization of genuine parts. This manual's exploded views and electrical spare parts list indicate the part numbers of the standardized genuine parts at the present. Regarding engineering part changes in our engineering department, refer to Sony service bulletins and service manual supplements.
- (3) The parts marked with s in the SP column of the exploded views and electrical spare parts list are normally stocked for replacement purposes. The parts marked with o in the SP column are not normally required for routine service work. Orders for parts marked with o will be processed, but allow for additional delivery time.

2-12. MUTING OF THE TAPE BEGINNING SENSOR AND TAPE END SENSORS

Put the cap on the LED Assembly as shown in the figure.



2-13. HOW TO OPERATE THE UNIT WITHOUT CASSETTE-UP COMPARTMENT AND CASSETTE TAPE INSERTING

. The unit will not operate if there is a strong light source near it.

1. How to put the unit into the THREADING mode.

- (1) Remove the Top Panel and Front Panel referring to Section 2-1.
- (2) Remove the Cassette Compartment Assembly from the unit referring to Section 2-3. Then do not disconnect the connectors.
- (3) Turn the power ON.
- (4) Stick the adhesive tape on the RECOG Switch and the pins are pressed.
- (5) Press the micro switch of the Cassette Compartment Block on time in the direction of the arrow, and remove it.
- (6) Turn the Reef Switch of the Cassette Compartment Block ON.

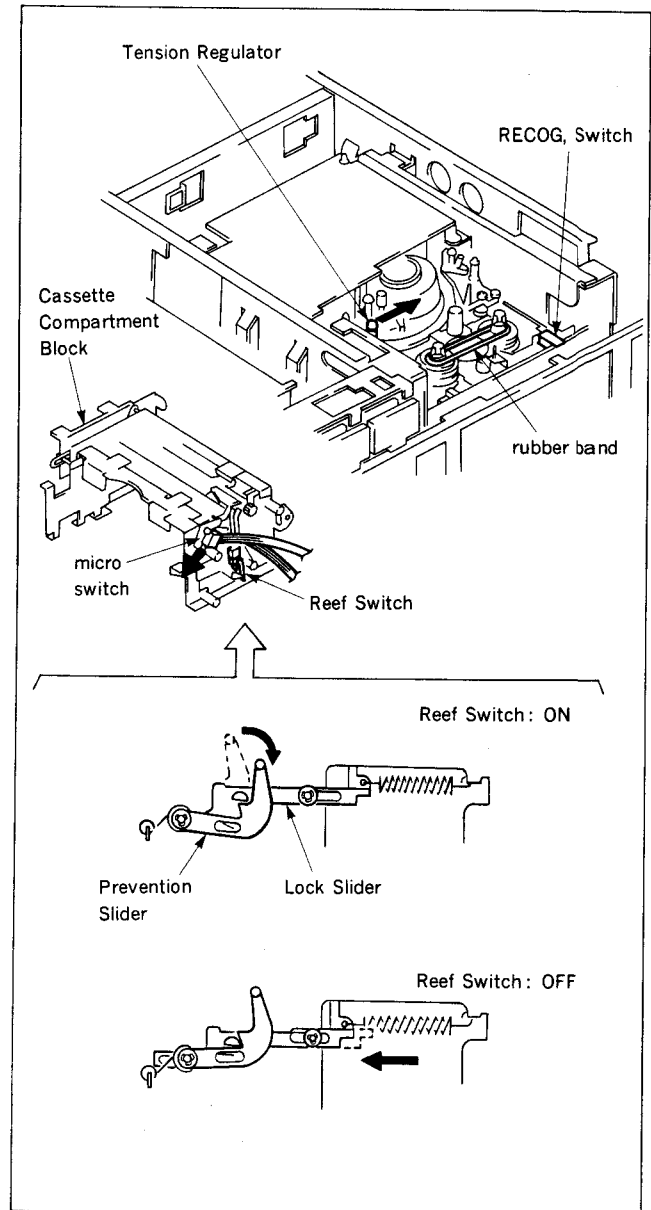
2. How to put the unit into the Playback or Recording mode.

- (1) Put the unit into the THREADING mode referring to the above procedures.
- (2) Hook a rubber band between S Reel table and T Reel Table.
- (3) Press the REC or PLAY Button of the Key Panel. When the T Reel Table starts rotating, press the Tension Regulator Arm Assembly in the direction of the arrow. Then the Tension Regulator Band is released and the S Reel Table Starts turning.
- (4) How to put the unit into the STOP mode, press the STOP key of the Key Panel.

3. How to put the unit into the EJECT mode.

- (1) Press the EJECT Button of the Key Panel.

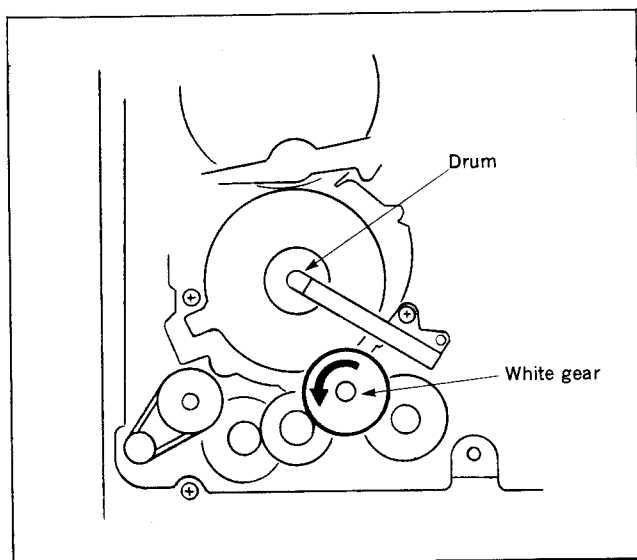
Note: It is possible to operate (REC, PLAY STOP, EJECT etc.) the unit with switches on the MB-19 Board in stead of using buttons of the Key Panel. If turn the POWER Switch on the MB-19 Board to OFF, the unit can not be operated.



2-14. CASSETTE TAPE REMOVAL PROCEDURE WHEN NORMAL EJECTION IS NOT POSSIBLE

I. When the winding cassette tape can not be removed from the Drum.

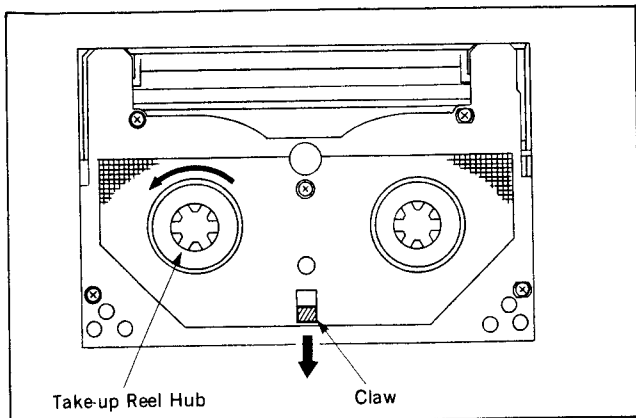
- (1) Remove the Top Panel and remove the Bottom Plate referring to Section 2-1.
- (2) Turn the white gear near the Drum counter-clockwise and release the winding tape from the Drum.



- (3) The cassette tape remains inserting and remove the Cassette-up Compartment Block referring to Section 2-3.

At this time, be careful that the tape is not hooked to the Mecha-block.

- (4) Turn the Take-up Reel Hub counterclockwise while pushing the claw of the back of the cassette in the direction of arrow. Wind up the tape into the cassette by hand.



- (5) Remove the cassette tape from the Cassette-up Compartment Block.

There are two ways as follows:

1. Turn the Worm Gear in the direction of the arrow for releasing the lock of the Cassette Holder while pushing the Lock Slider in the direction of the arrow by hand. (fig.1) Then the Cassette Holder gradually rises and the cassette tape is ejected.

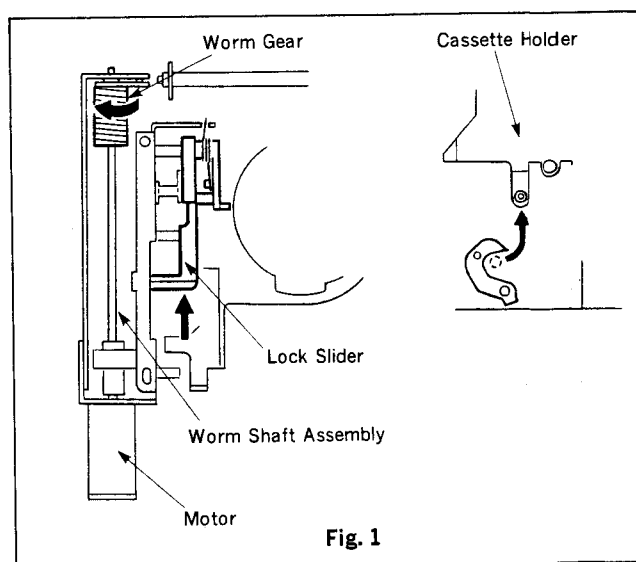


Fig. 1

2. Remove the two fixing screws and remove the Motor Bracket, Motor and Worm Shaft Assembly. Push the Lock Slider in the direction of the arrow as shown in figure 1. Raise the Cassette Holder by hand and the cassette tape is ejected.

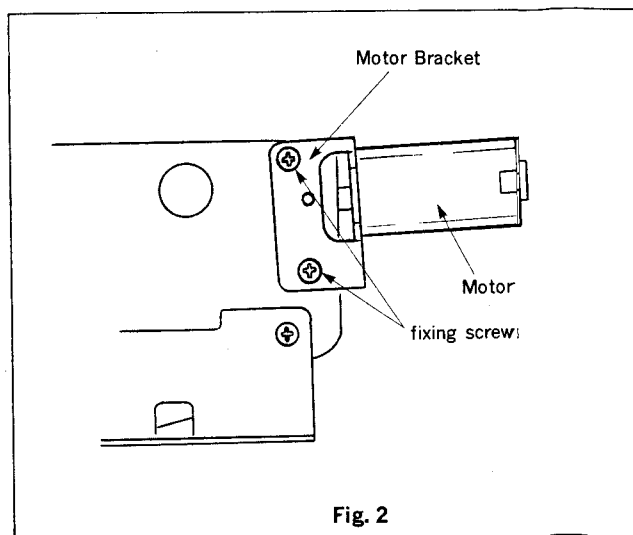

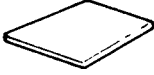
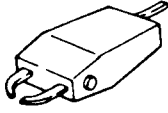
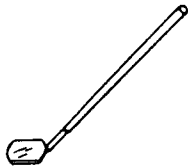
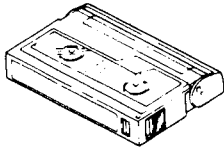
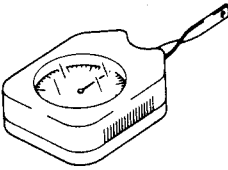
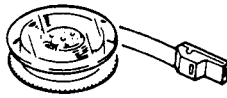
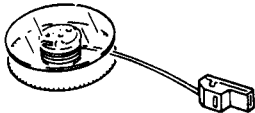
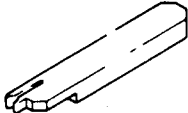


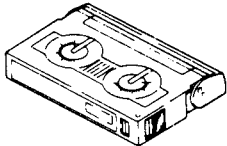
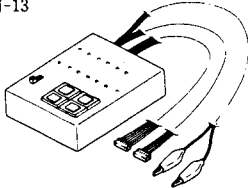
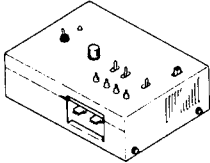
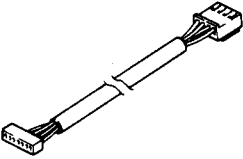
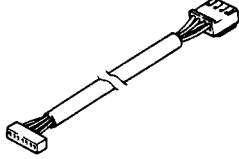
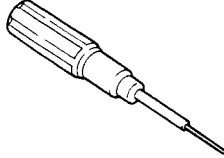


Fig. 2

2-15. FIXTURE

| Ref. No. | Parts No. | Description | Application |
|----------|-------------------|--|--|
| J-1 | Y-2031-001-1 | Cleaning Fluid | Cleaning |
| J-2 | 7-741-900-53 | Wiping Cloth | Cleaning |
| J-3 | Commercially sold | Head Degausser | Head degauss adjustment |
| J-4 | J-6080-840-A | Small Adjustment Mirror | |
| J-5 | 8-967-995-07 | Alignment Tape, WR5-1CP | Tape path adjustment |
| | 8-967-995-18 | Alignment Tape, WR5-7CE | Video frequency response adjustment |
| | 8-967-995-47 | Alignment Tape, WR5-4CSP | Video adjustment |
| | 8-967-995-48 | Alignment Tape, WR5-8CSE | Serve, audio and video adjustment (SP) |
| | 8-967-995-57 | Alignment Tape, WR5-8CLE | Servo, audio and video adjustment (LP) |
| | 8-967-992-17 | Alignment Tape, WR2-3CS | Switching position adjustment |
| J-6 | J-6080-827-A | Dial Tension Gauge | Measurement of torque |
| J-7 | J-6080-831-A | Tension Measurement Reel | FWD Back tension adjustment |
| J-8 | J-6080-832-A | Tension Measurement Reel | Brake torque check |
| J-9 | J-6080-823-A | No. 10 Gear Phase Tool | Threading ring assembly replacement |
| J-10 | J-6080-826-A | No. 6 Guide Lock Screwdriver | Tape path adjustment |
| J-11 | — | Rotary Drum Tool (packed with the Rotary Upper Drum for repair) | Rotary upper drum replacement |
| J-12 | J-6080-824-A | FWD, RVS Winding Torque Cassette | S•T reel table winding torque check |
| J-13 | J-6080-825-A | Mode Selector | Mechanical check, adjustment and replacement |
| J-14 | J-6080-891-A | Track Shift Tool | Tape path adjustment |
| J-15 | J-6080-883-A | RE/SWP Connector | Tape path adjustment |
| J-16 | J-6080-884-A | CTL Connector | Tape path adjustment |
| J-17 | 7-700-766-01 | Hexagonal Screwdriver (0.89 mm) | Tape path adjustment |

| | | | |
|---|---|--|---|
| J-1  | J-2  | J-3  | J-4  |
| J-5  | J-6  | J-7  | J-8  |
| J-9  | J-10  | J-11 (Packed with the rotary upper drum for repair)  | J-12  |
| J-13  | J-14  | J-15  | J-16  |
| J-17  | | | |

2-16. DIAL MENU OPERATION

The system controls (Still Timer, Preroll Time, etc.) initially set at the factory can be arbitrarily modified using the SEARCH dial, MENU button, DATA button, and SET button.

The dial menu has the following functions:

- . BASIC FUNCTION
- . ENHANCED FUNCTION

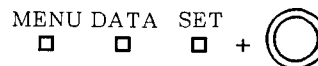
2-16-1. Button and Dial Settings

Search dial: Selects the ITEM, Modifies the DATA, Moves the cursor.

MENU button: Selects the ITEM when used with a SEARCH dial.

DATA button: Modifies the DATA when used with a SEARCH dial.

SET button : Writes the DATA into the memory.



2-16-2. Operation

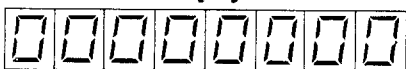
Put the unit into DIAL MENU operation mode

The DIAL MENU operation data appears on the Front Panel's time counter display and monitor television (the video signals should be connected to the VIDEO IN connector and the monitor television should be connected to the MONITOR OUT connector on the Connector Panel).

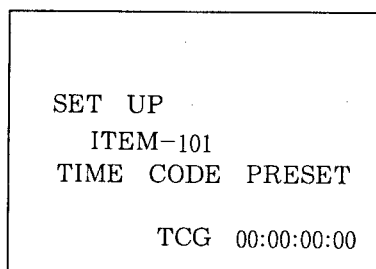
- (1) Set the REMOTE/LOCAL switch on the Front Panel to LOCAL.
- (2) Put the unit into JOG mode (when the SHUTTLE lamp is on, press the SEARCH dial).
- (3) Press the STOP button and put into the STOP mode or PLAY PAUSE mode.
- (4) Set the CTL/TC/DIAL MENU switch on the Front Panel to DIAL MENU.

The unit is put into the DIAL MENU mode and the $\triangle \square \triangle$ lamp at the top of the SEARCH dial lights.

time counter display



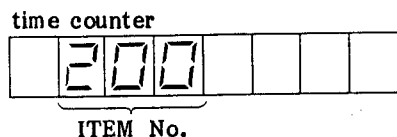
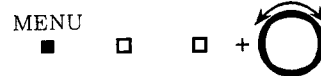
Monitor



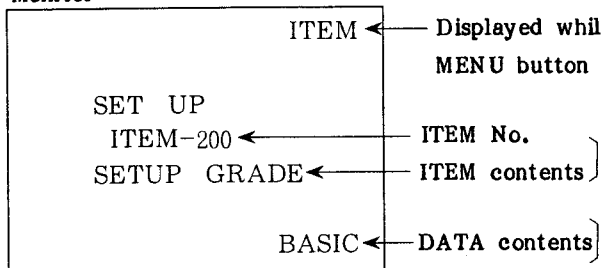
(NOTE) The VTR cannot be operated normally in the DIAL MENU operation mode.

Select the ITEM

(5) Turn the SEARCH dial while pressing the MENU button.



Monitor



ITEM ← Displayed while the MENU button is pressed.

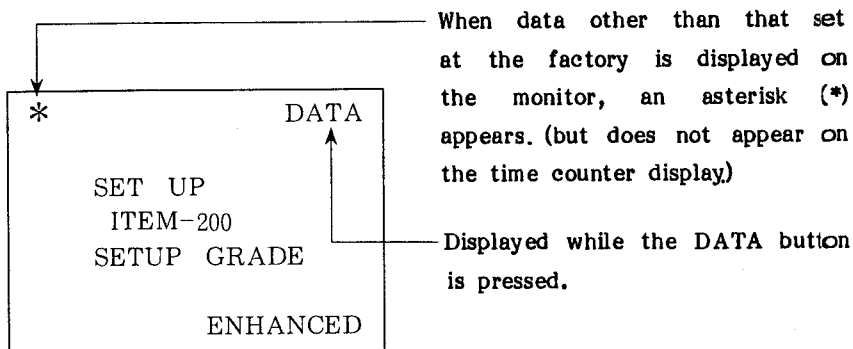
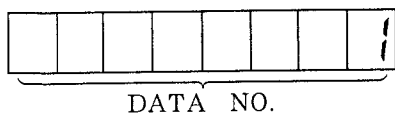
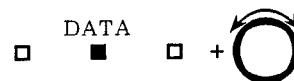
When the SEARCH dial is turned, the ITEM No. and contents are changed. The data corresponding to the ITEM No. are displayed.

(6) Stop the dial when the desired ITEM is displayed, and then release the MENU button.

When the DATA No. on the time counter display and DATA contents on the monitor blink, they can be modified as following method.

Modify the data

(7) Turn the dial while pressing the DATA button.

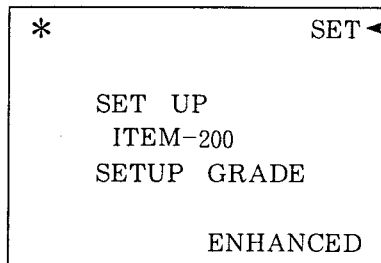
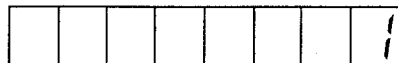


DATA ↑ Displayed while the DATA button is pressed.

(8) Stop the dial when the desired data is displayed, and release the DATA button.

Set the data

(9) Press the SET button.



Displayed while the SET button is pressed. (For ITEM No. 101 is displayed only when data is set.)

- . The displayed data is written into the memory, the data remains unchanged even if the POWER switch is turned OFF.
- . If the updated data is set, the <□> lamp at the top of the SEARCH dial flashes for one second when the SET button is pressed. The DATA No. and DATA content blinking stops at that time.

2-16-3. ITEM/DATA

(1) BASIC FUNCTION

| ITEM | | DATA | | ITEM and DATA Description |
|--------------------------|---------------------------------|---------------------------|---------------------------------------|--|
| ITEM No. time counter | ITEM content monitor display | DATA No. time counter | DATA content monitor display | |
| 101 | TIME CODE PRESET | 00000000 } 23595929 | TCG00:00:00:00 } TCG23:59:59:29 | Time code setting. 00H00M00S00Fr through 23H59M59S29Fr can be set. Factory setting: DATA No. 00000000 (TCG 00 : 00 : 00 : 00) |
| 105 | CHARACTER POSITION | 0 } 15 | OFF 1 } 15 | Set the character position that is super-imposed on the monitor (only the vertical direction). When set to OFF, the character is not displayed. Factory setting: OFF |
| 106 | CHARACTER SIZE | 0 1 | SMALL LARGE | Set the character size that is displayed on the monitor. Factory setting: DATA No.0 (SMALL) |
| 200 | SETUP GRADE | 0 1 | BASIC ENHANCED | DATA No. 0 BASIC: Enable to select ITEM from 101 to 200 in the DIAL MENU operation. DATA No. 1 ENHANCED: Enable to select ITEM from 101 to 227 in the DIAL MENU operation. Factory setting: DATA No. 0 (BASIC) |

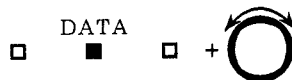
Setting the data in the ITEM No.101

(NOTE).Select the TIME CODE SLAVE MODE in the ITEM No. 227.

1. Turn the SEARCH dial and blink the desired digit.

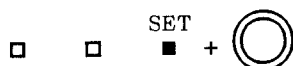


2. Turn the dial while pressing the DATA button to set the desired figures.



3. Repeat the steps 1, 2 to set the desired figures.

4. When completed, press the SET button.



(2) ENHANCED FUNCTION

The ENHANCED FUNCTION can be used by setting data to ENHANCED in the ITEM No. 200.

| ITEM | | DATA | | ITEM and DATA Description |
|--------------------------|---------------------------------|--|---|--|
| ITEM No. time counter | ITEM content monitor display | DATA No. time counter | DATA content monitor display | |
| 201 | ERROR STATUS | Error 02 Error 10 Error 20 Error 21 Error 22 Error 90 Error 99 | NONE TAPE SLACK HUMID SYSTEM ERROR SYSTEM ERROR 50 | Self-diagnostic function. When trouble occurs during normal operation, message "ERROR CODE" appears on the Front Panel's time counter display in any mode. When the unit is put into the DIAL MENU mode to select this ITEM, error status corresponding to the error code are displayed on the monitor. (Refer to Section 2-17-4 for further details.) NOTE: The ITEM data content cannot be modified. Normal operation :(NONE) |
| 205 | HOUR METER (DRUM) | 00000 15000 | 00000H 15000H | Displays the rotation time of the upper drum. Head replacement can be decided at that time. Up to from 0H to 15000H can be displayed. NOTE: The ITEM data content cannot be modified. |
| 206 | HOUR METER | 00000 15000 | 00000H 15000H | Displays the total time of the power on sequence. Up to from 0H to 15000H can be displayed. NOTE: The ITEM data content cannot be modified. |
| 207 | STILL TIMER | 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 | 0.5 SEC. 1 SEC. 5 SEC. 10 SEC. 20 SEC. 30 SEC. 40 SEC. 50 SEC. 1 MIN. 2 MIN. 3 MIN. 4 MIN. 5 MIN. 6 MIN. 7 MIN. 7 MIN. | The unit automatically enters the tape PROTECTION mode after it has been in the tape STOP (or STILL) mode for a fixed time to prevent the video head from clogging (to reduce the tape damage). This item sets the transition time of the tape STOP to tape PROTECTION mode. The time can be set from 0.5 seconds to 7 minutes. Factory setting : DATA No. 15 (7 MIN) |

| ITEM | | DATA | | ITEM and DATA Description |
|--------------------------|--|--|--|--|
| ITEM No. time counter | ITEM content monitor display | DATA No. time counter | DATA content monitor display | |
| 209 | SELECTION FOR SEARCH DIAL ENABLE | 0 1 | DIAL DIRECT VIA SEARCH BUTTON | <p>When the SEARCH dial is turned or the SEARCH button is pressed, the unit enters the SEARCH mode. This item sets entering the SEARCH mode.</p> <p>DATA No. 0 DIAL DIRECT : When the SEARCH dial is turned, the unit enters the SEARCH mode from any mode other than REC/EDIT.</p> <p>DATA No. 1 VIA SEARCH BUTTON : When the SEARCH button is pressed, the unit enters the SEARCH mode.</p> <p>Factory setting : DATA No.1 (VIA SEARCH BUTTON)</p> |
| 214 | PREROLL TIME | 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 | 0 SEC. 1 SEC. 2 SEC. 3 SEC. 4 SEC. 5 SEC. 6 SEC. 7 SEC. 8 SEC. 9 SEC. 10 SEC. 11 SEC. 12 SEC. 13 SEC. 14 SEC. 15 SEC. | <p>Sets the preroll time during editing. The preroll time can be set from 0 to 15 seconds.</p> <p>Factory setting : DATA No. 05 (5 SEC)</p> |
| 218 | PINCH ON DELAY | 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | <p>Adjusts the time required from PLAY command sending to tape transport.</p> <p>Factory setting : DATA No. 3 (3)</p> |

| ITEM | | DATA | | ITEM and DATA Description |
|--------------------------|---------------------------------|--------------------------|---------------------------------|--|
| ITEM No. time counter | ITEM content monitor display | DATA No. time counter | DATA content monitor display | |
| 224 | TAPE PROTECTION MODE | 0 1 | STEP FWD LONG PAUSE | <p>When the time in the SEARCH STILL mode set using ITEM No. 207 passes, selects the mode setting.</p> <p>DATA No. 0 STEP FWD : The tape is sent repeatedly for one second at 1/30 times normal speed in the forward direction.</p> <p>DATA No. 1 LONG PAUSE : Enters the LONG PAUSE mode.</p> <p>Factory setting : DATA No. 0 (STEP FWD)</p> |
| 226 | DIGITAL CNR LEVEL | 0 1 2 | OFF 1 2 | <p>Croma Noise Reduction OFF</p> <p>1 : minimum 2 : maximum</p> <p>Factory Setting : DATA No. 2 (2)</p> |
| 227 | TIME CODE SLAVE MODE | 0 1 | OFF ON | <p>ON : When straining the record from portion which the time code has already recorded, the time code is recorded continuously.</p> <p>When starting the record from portion which the time code is not recorded, it is recorded from "00 : 00 : 00"</p> <p>OFF : The time code is recorded from the Time Code Preset Data which is set by menu 101.</p> <p>Factory Setting : DATA No. 1 (ON)</p> |

2-16-4. System Error

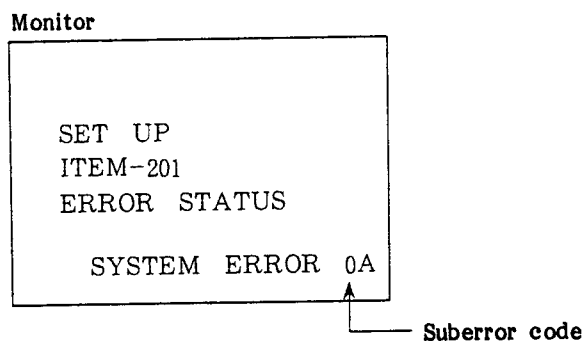
When a trouble occurs during normal operation and an error code appears on the time counter display of the Front Panel, the error status corresponding to the error code is displayed on the monitor by selecting the Item No. 201 on the dial menu. The error cause can be learned at that time.

| Counter display | Monitor display | Description |
|-----------------|-----------------|--|
| Error 02 | TAPE SLACK | Excessive tape tension |
| Error 10 | HUMID | The condensation |
| Error 20 | SYSTEM ERROR | Mechanical error. Distinguished by the suberror code. (Refer to the following.) |
| Error 21 | —— | RAM error when the POWER is ON. |
| Error 22 | SYSTEM ERROR | Communication error between optional BKU-703A and the unit. |
| Error 90 | —— | Communication error between SY board and KY board. |
| Error 99 | —— | Lacking the 1/2 VD pulse to supply for the SY board. |

(NOTE) Displayed on the time counter display about ERROR 21, 90, 99.

When Error 20 "SYSTEM ERROR" appears, a suberror code is displayed at the lower right corner on the monitor.

The suberror code is described below.



The suberror code is a two-digit hexadecimal number. Assume that the high-order digit is called Error 1 and the low-order digit called Error 0.

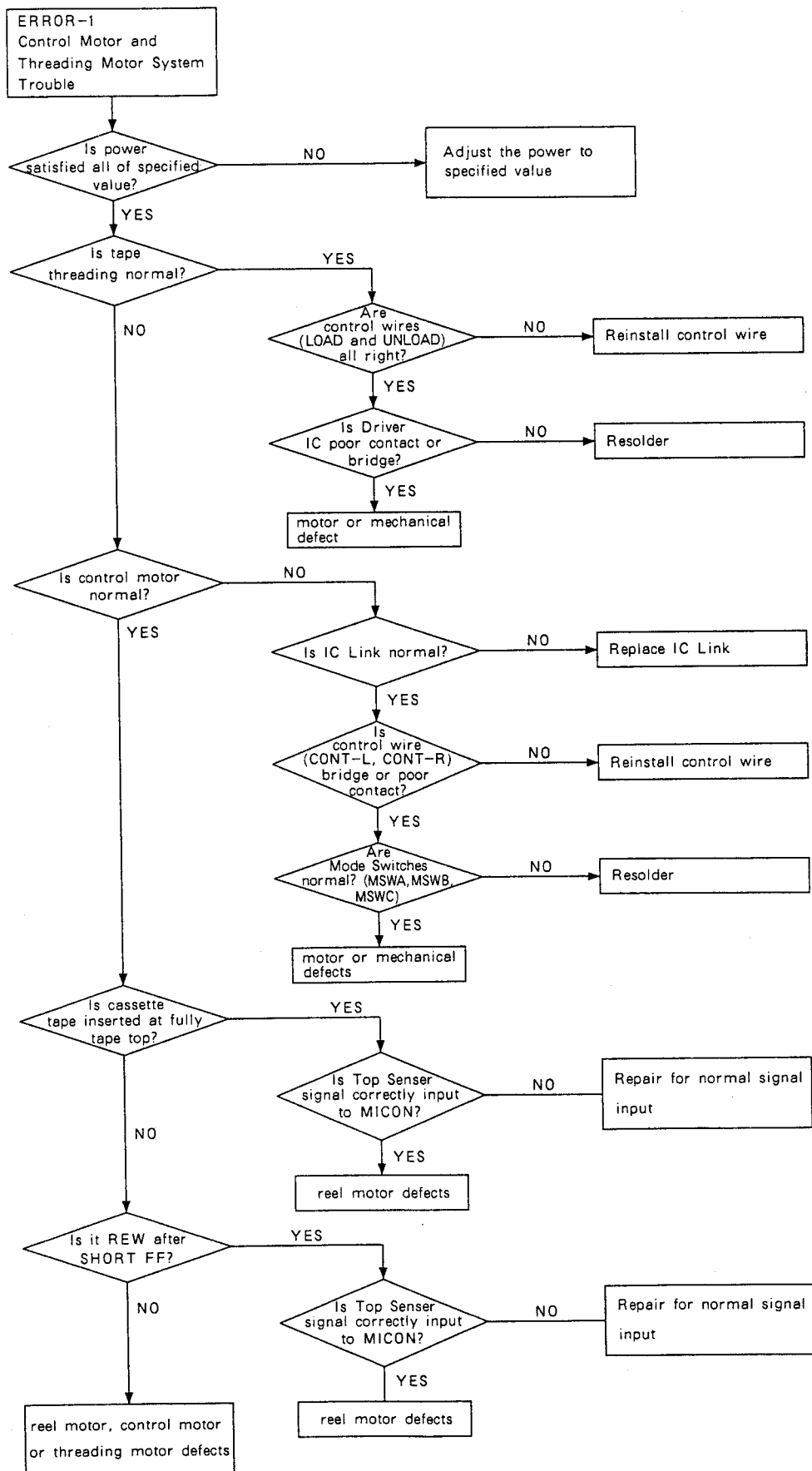
Error 0

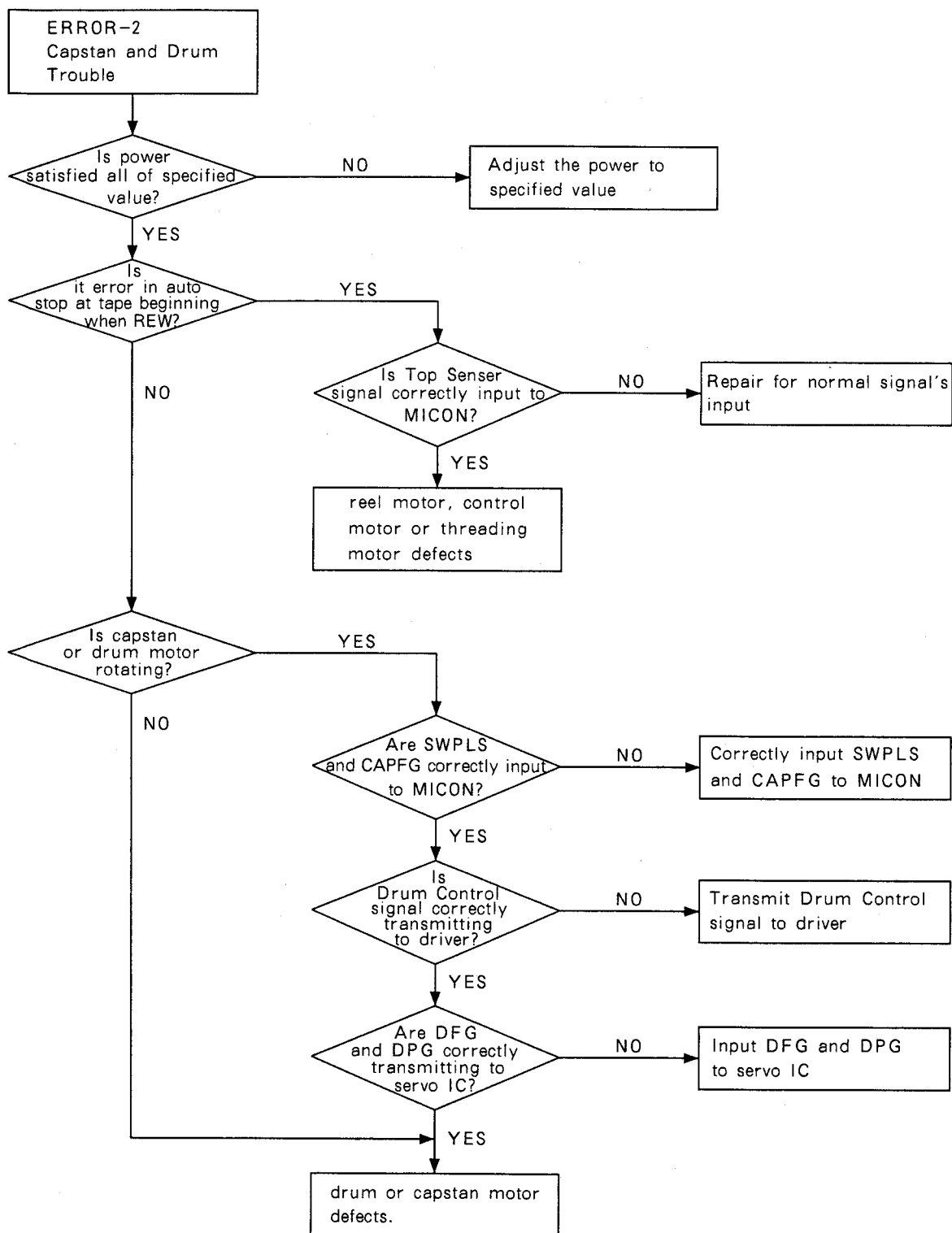
| | |
|---|---|
| 0 | Normal operation |
| 1 | Control signal error of threading motor and control motor systems, error of reel motor, or communication error of TOP/END sensor. |
| 2 | Tape top error or control signal error of drum/capstan. |
| 3 | Error of Cassette-up Compartment, Cassette-up Motor, control line and mechanical switch. |
| 4 | Communication error between mechanical control and ATF control. |
| 5 | Communication error between microcomputer M1 and mechanical Block. |

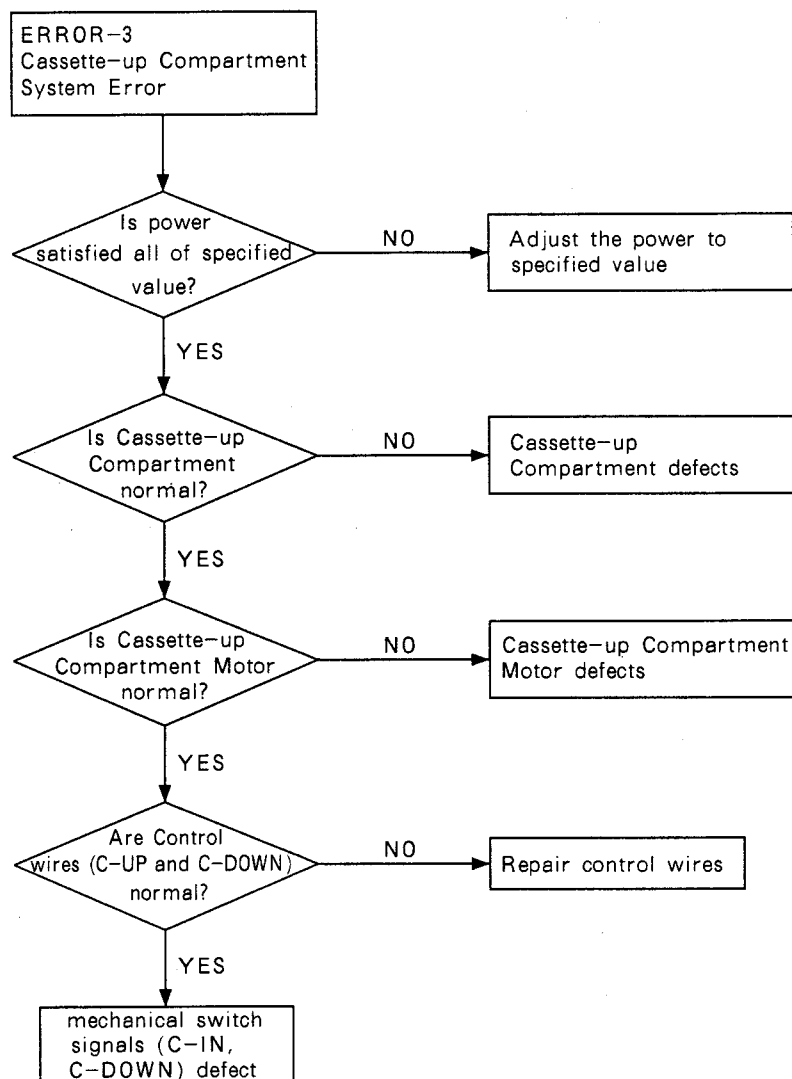
Error 1

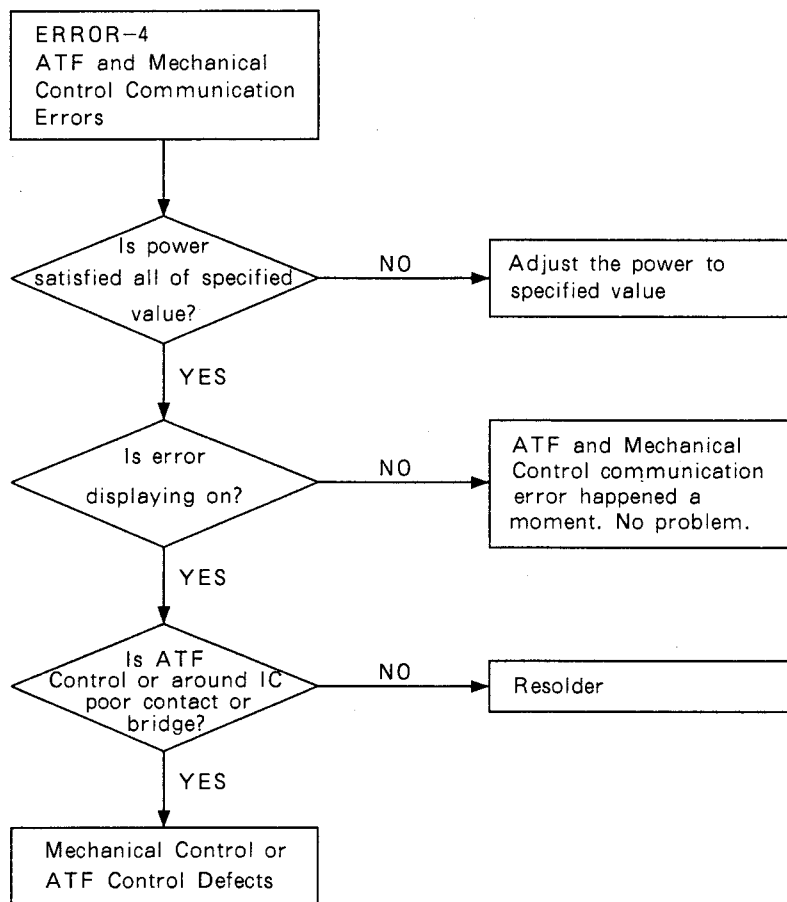
| | |
|---|------------------|
| 0 | Normal operation |
|---|------------------|

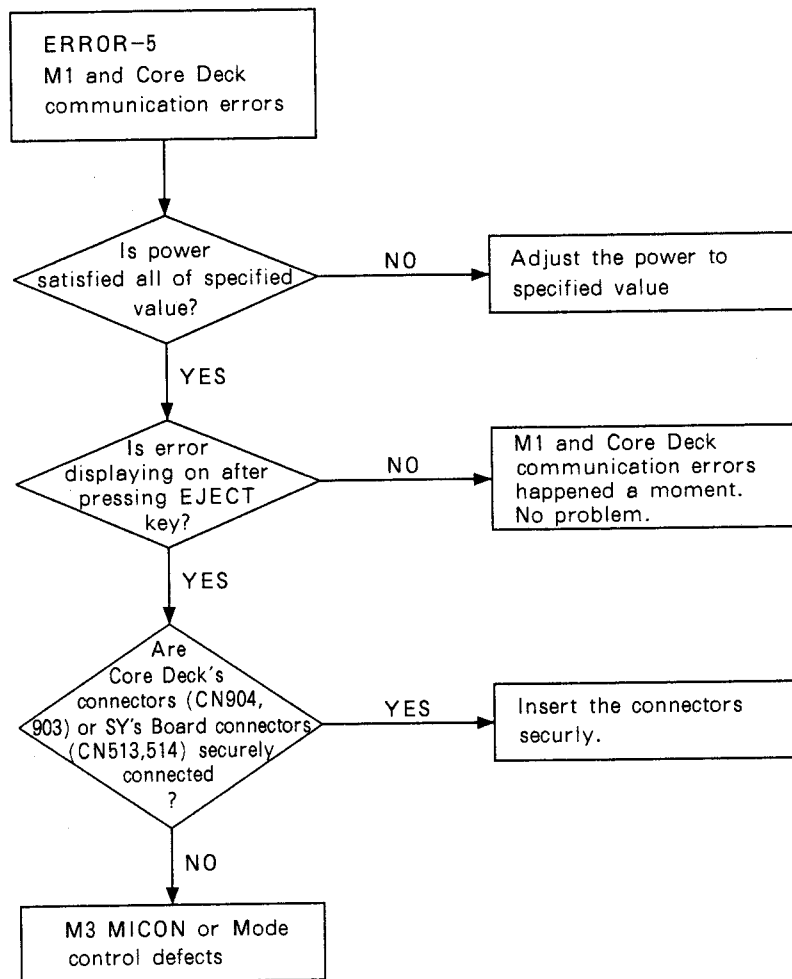
FLOW CHART











2-17. TIMING CHART

Movement modes about ※ 1 through ※ 6 in the Timing Chart are shown by these tables.

※ 1: Control Motor Control

| Control Motor Rotating Direction | <div> <div>CONT L ←</div> <div>CONT R →</div> </div> (clockwise direction) (counterclockwise direction) | | | | | | | | |
|-------------------------------------|--|-------|-----------------|-------|--------|-------|------|-------|-----|
| Control Position (code) | EJECT | BLANK | LOAD/ UNLOAD | BLANK | FF/REW | BLANK | STOP | BLANK | FWD |
| Control Switch Input | (4) | (7) | (2) | (7) | (6) | (7) | (3) | (7) | (1) |
| CONT C (IC003 ⑭) | H | H | L | H | H | H | L | H | L |
| CONT B (IC003 ⑬) | L | H | H | H | H | H | H | H | L |
| CONT A (IC003 ⑫) | L | H | L | H | L | H | H | H | H |

※ 2: Loading Motor Control

| Control Motor Rotating Direction | <div> <div>Unthreading ←</div> <div>Threading →</div> </div> | | | | | | | | |
|-------------------------------------|--|-------|----------------|-------|---------------|-------|-----------------|-------|----------------|
| Motor Position (code) | LOADING TOP | BLANK | UNLOAD WAIT | BLANK | DRUM START | BLANK | T REEL START | BLANK | LOADING END |
| Loading Switch Input | (1) | (7) | (5) | (7) | (4) | (7) | (6) | (7) | (3) |
| LOAD SW C (IC003 ⑱) | L | H | H | H | H | H | H | H | L |
| LOAD SW B (IC003 ⑰) | L | H | L | H | L | H | H | H | H |
| LOAD SW A (IC003 ⑯) | H | H | H | H | L | H | L | H | H |

※ 3: Casecon Motor Control Output

| UP | DOWN | Motor Drive |
|----|------|--------------------------|
| L | L | No drive |
| L | H | Drives in down direction |
| H | L | Drives in up direction |
| H | H | Short brake |

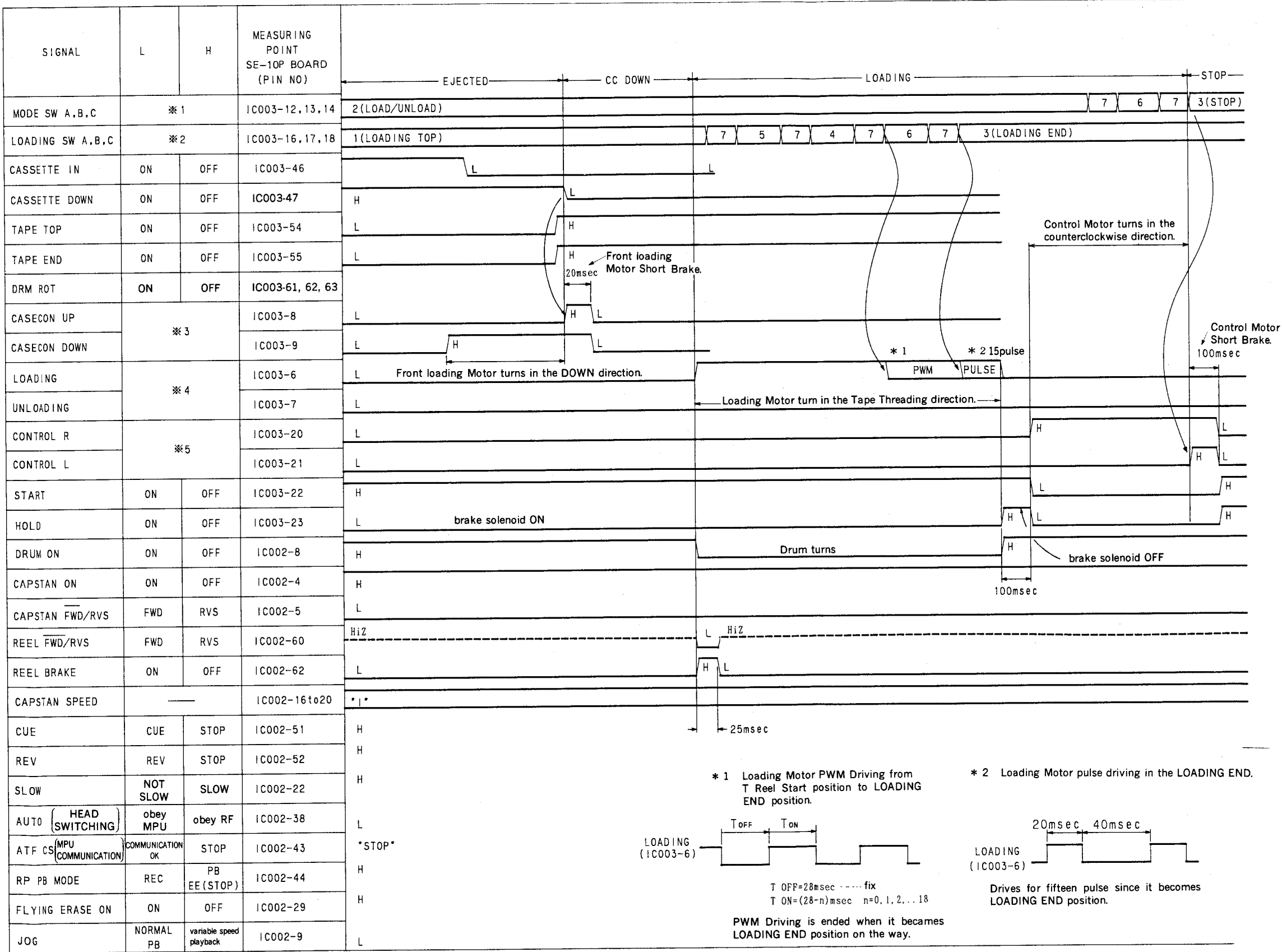
※ 5: Control Motor Output

| CONT L | CONT R | Motor Drive |
|--------|--------|--|
| L | L | No drive |
| L | H | Drives the slider at a control position to the right |
| H | L | Drives the slider at a control position to the left |
| H | H | Short brake |

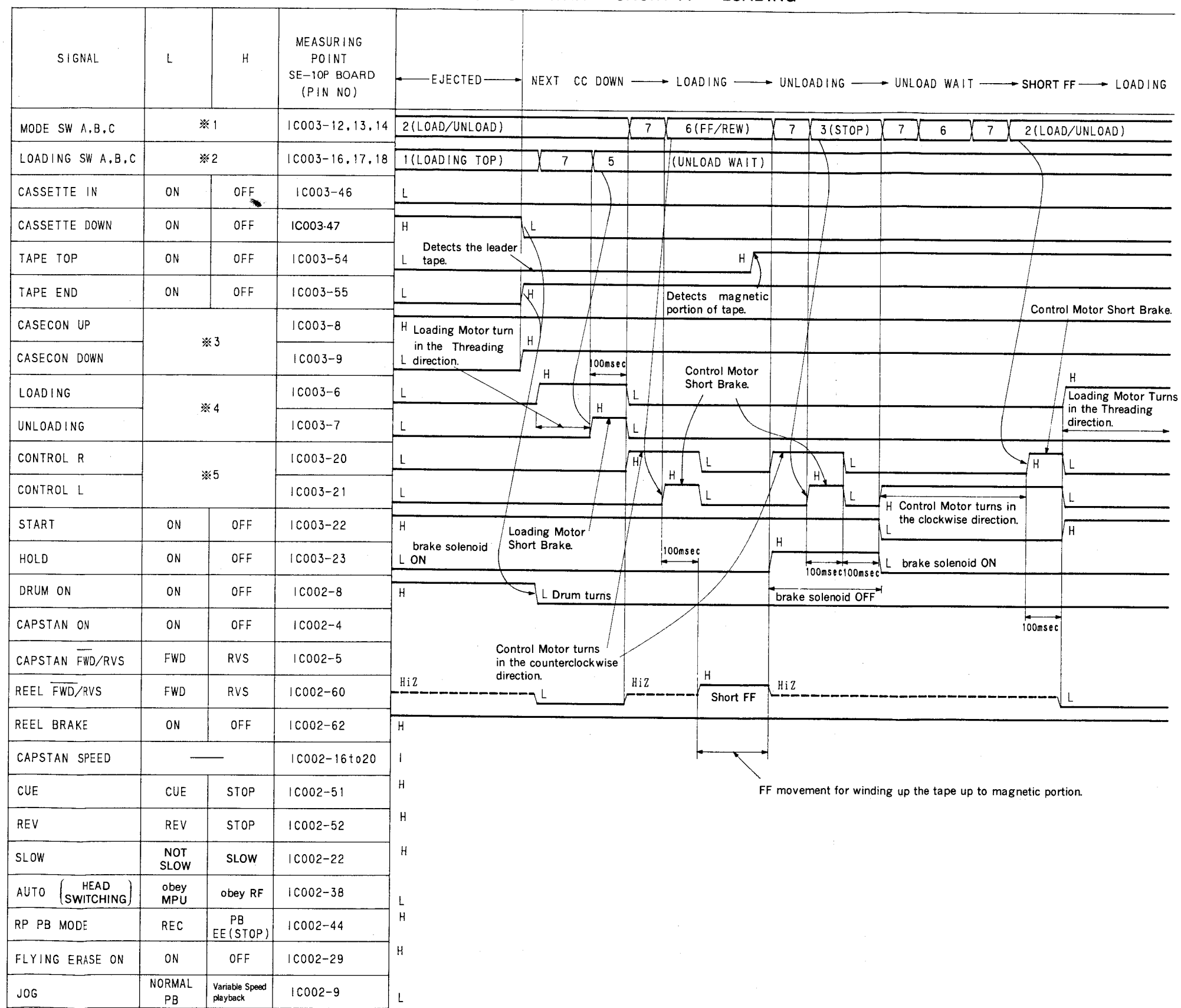
※ 4: Loading Motor Control Output

| LOAD | UNLOAD | Motor Drive |
|------|--------|-------------------------------|
| L | L | No drive |
| L | H | Drives in unloading direction |
| H | L | Drives in loading direction |
| H | H | Short brake |

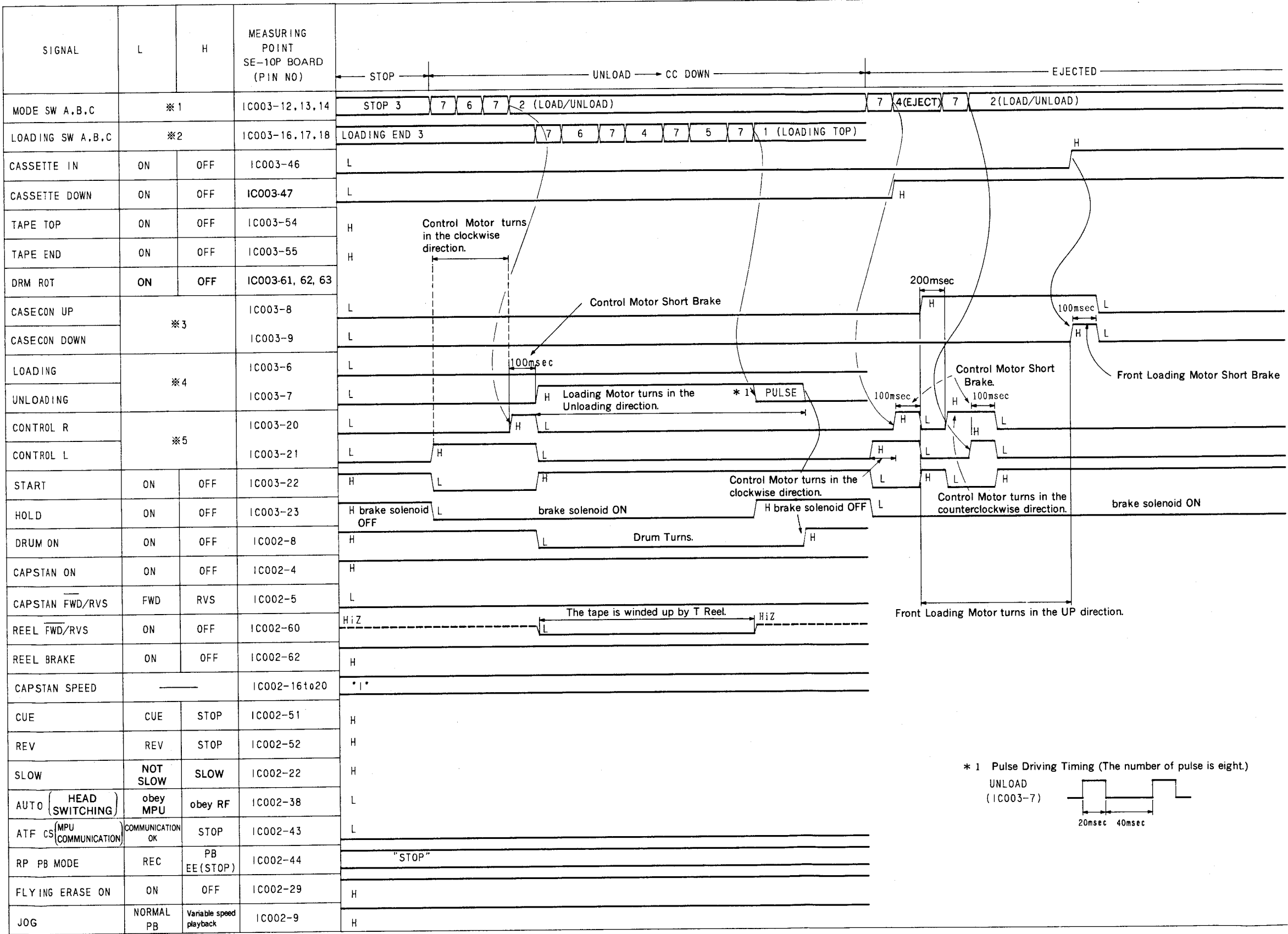
1. EJECTED → CC DOWN → LOADING → STOP



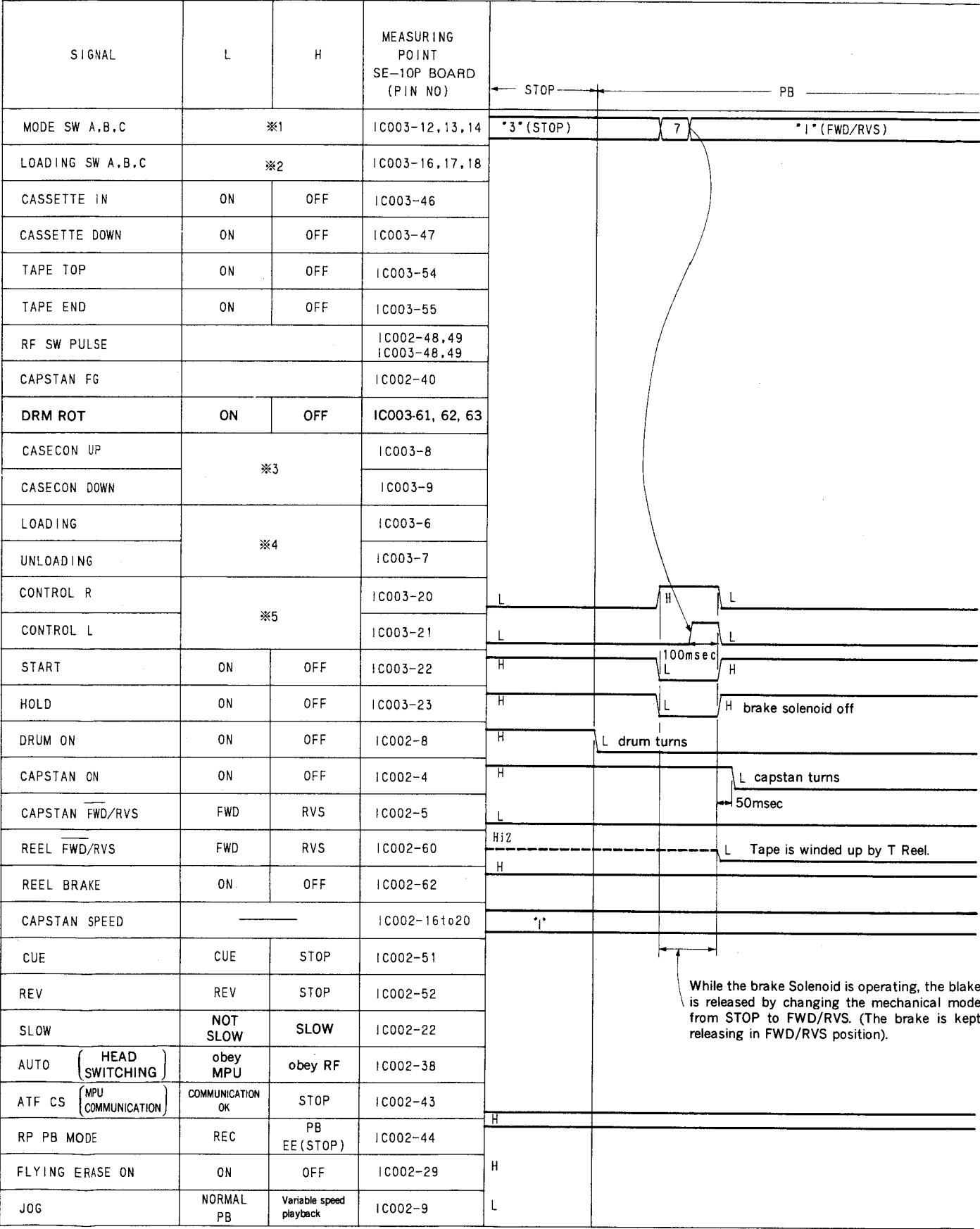
2. EJECTED → CC DOWN → LOADING → UNLOADING → UNLOAD WAIT → SHORT FF → LOADING



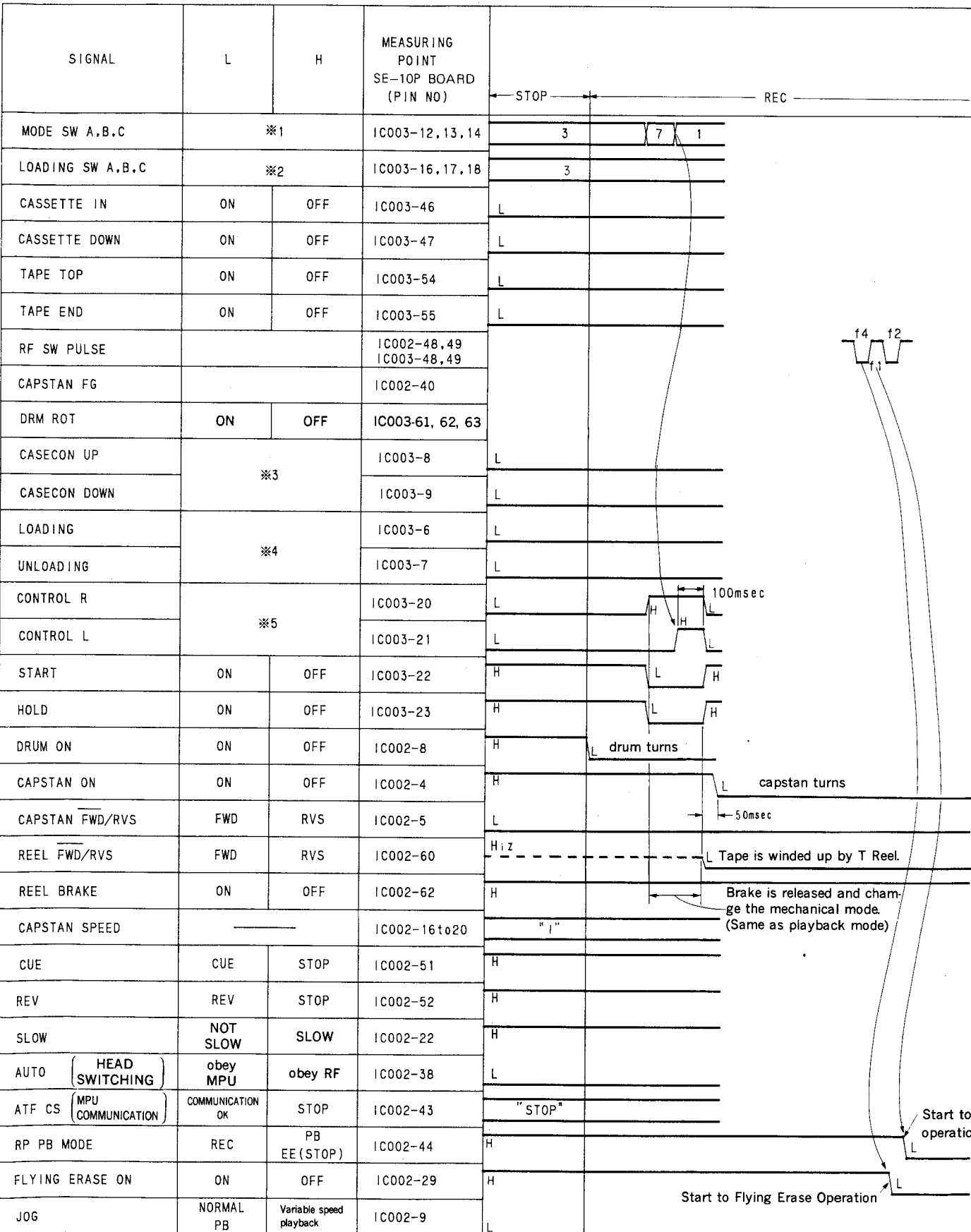
3. STOP → UNLOAD → CC DOWN → EJECTED



4. STOP → PB



5. STOP → REC



6. PB, X1 → X9

| SIGNAL | L | H | MEASURING POINT SE-10P BOARD (PIN NO) | PB.x1 | x9 |
|----------------------------|------------------|-------------------------|--|---------|-------------|
| MODE SW A,B,C | ※1 | | IC003-12,13,14 | 1 | |
| LOADING SW A,B,C | ※2 | | IC003-16,17,18 | | |
| CASSETTE IN | ON | OFF | IC003-46 | | |
| CASSETTE DOWN | ON | OFF | IC003-47 | | |
| TAPE TOP | ON | OFF | IC003-54 | | |
| TAPE END | ON | OFF | IC003-55 | | |
| RF SW PULSE | | | IC002-48,49 IC003-48,49 | | |
| CAPSTAN FG | | | IC002-40 | | |
| DRM ROT | ON | OFF | IC003-61, 62, 63 | | |
| CASECON UP | ※3 | | IC003-8 | | |
| CASECON DOWN | | | IC003-9 | | |
| LOADING | ※4 | | IC003-6 | | |
| UNLOADING | | | IC003-7 | | |
| CONTROL R | ※5 | | IC003-20 | | |
| CONTROL L | | | IC003-21 | | |
| START | ON | OFF | IC003-22 | H | |
| HOLD | ON | OFF | IC003-23 | H | |
| DRUM ON | ON | OFF | IC002-8 | L | |
| CAPSTAN ON | ON | OFF | IC002-4 | L | |
| CAPSTAN FWD/RVS | FWD | RVS | IC002-5 | L | |
| REEL FWD/RVS | FWD | RVS | IC002-60 | L | |
| REEL BRAKE | ON | OFF | IC002-62 | H | |
| CAPSTAN SPEED | | | IC002-16 to 20 | 1 | 3 5 7 9 |
| CUE | CUE | STOP | IC002-51 | H | |
| REV | REV | STOP | IC002-52 | H | |
| SLOW | NOT SLOW | SLOW | IC002-22 | H | |
| AUTO (HEAD SWITCHING) | obey MPU | obey RF | IC002-38 | L | |
| ATF CS (MPU COMMUNICATION) | COMMUNICATION OK | STOP | IC002-43 | FWD PB | x3 x5 x7 x9 |
| RP PB MODE | REC | PB EE(STOP) | IC002-44 | H | |
| FLYING ERASE ON | ON | OFF | IC002-29 | H | |
| JOG | NORMAL PB | Variable speed playback | IC002-9 | L(H) PB | |

Capstan speed is activated gradually from one time to nine times.

2frames 2frames 2frames

Servo Circuit CUE mode

Video circuit variable speed playback mode.

7. PB → X (-9)

| SIGNAL | L | H | MEASURING POINT SE-10P BOARD (PIN NO) | PB | X(-9) |
|----------------------------|------------------|-------------------------|---|----|--|
| MODE SW A.B.C | ※1 | | IC003-12,13,14 | | |
| LOADING SW A.B.C | ※2 | | IC003-16,17,18 | | |
| CASSETTE IN | ON | OFF | IC003-46 | | |
| CASSETTE DOWN | ON | OFF | IC003-47 | | |
| TAPE TOP | ON | OFF | IC003-54 | | |
| TAPE END | ON | OFF | IC003-55 | | |
| RF SW PULSE | | | IC002-48,49 IC003-48,49 | | |
| CAPSTAN FG | | | IC002-40 | | |
| DRM ROT | ON | OFF | IC003-61, 62, 63 | | |
| CASECON UP | ※3 | | IC003-8 | | |
| CASECON DOWN | | | IC003-9 | | |
| LOADING | ※4 | | IC003-6 | | |
| UNLOADING | | | IC003-7 | | |
| CONTROL R | ※5 | | IC003-20 | | |
| CONTROL L | | | IC003-21 | | |
| START | ON | OFF | IC003-22 | | |
| HOLD | ON | OFF | IC003-23 | | |
| DRUM ON | ON | OFF | IC002-8 | | |
| CAPSTAN ON | ON | OFF | IC002-4 | L | |
| CAPSTAN FWD/RVS | FWD | RVS | IC002-5 | L | |
| REEL FWD/RVS | FWD | RVS | IC002-60 | L | |
| REEL BRAKE | ON | OFF | IC002-62 | H | |
| CAPSTAN SPEED | | | IC002-16 to 20 | | |
| CUE | CUE | STOP | IC002-51 | H | |
| REV | REV | STOP | IC002-52 | H | |
| SLOW | NOT SLOW | SLOW | IC002-22 | H | |
| AUTO (HEAD SWITCHING) | obey MPU | obey RF | IC002-38 | L | |
| ATF CS (MPU COMMUNICATION) | COMMUNICATION OK | STOP | IC002-43 | PB | FWD STILL X(-1) X(-3) X(-5) X(-7) |
| RP PB MODE | REC | PB EE(STOP) | IC002-44 | H | |
| FLYING ERASE ON | ON | OFF | IC002-29 | H | |
| JOG | NORMAL PB | Variable speed playback | IC002-9 | L | H Video circuit variable speed playback mode |

Tape is stopped. Tape speed is activated gradually from minus one time to minus seven times.

2frames 2frames 2frames

3 5 7

Servo circuit REV mode

8. STOP → FF (REW)

| SIGNAL | L | H | MEASURING POINT SE-10P BOARD (PIN NO) | STOP | FF (REW) |
|----------------------------|------------------|-------------------------|--|--------|------------|
| MODE SW A,B,C | ※1 | | IC003-12,13,14 | 3 | 7 6 |
| LOADING SW A,B,C | ※2 | | IC003-16,17,18 | | |
| CASSETTE IN | ON | OFF | IC003-46 | | |
| CASSETTE DOWN | ON | OFF | IC003-42,47 | | |
| TAPE TOP | ON | OFF | IC003-54 | | |
| TAPE END | ON | OFF | IC003-55 | | |
| RF SW PULSE | | | IC002-48,49 IC003-48,49 | | |
| CAPSTAN FG | | | IC002-40 | | |
| DRM ROT | ON | OFF | IC003-61, 62, 63 | | |
| CASECON UP | ※3 | | IC003-8 | | |
| CASECON DOWN | | | IC003-9 | | |
| LOADING | ※4 | | IC003-6 | | |
| UNLOADING | | | IC003-7 | | |
| CONTROL R | ※5 | | IC003-20 | L | |
| CONTROL L | | | IC003-21 | L | |
| START | ON | OFF | IC003-22 | | |
| HOLD | ON | OFF | IC003-23 | H | |
| DRUM ON | ON | OFF | IC002-8 | H | |
| CAPSTAN ON | ON | OFF | IC002-4 | H | |
| CAPSTAN FWD/RVS | FWD | RVS | IC002-5 | L | |
| REEL FWD/RVS | FWD | RVS | IC002-60 | HIZ | (2.5V) PWM |
| REEL BRAKE | ON | OFF | IC002-62 | H | PWM |
| CAPSTAN SPEED | ※6 | | IC002-16 to 20 | "I" | |
| CUE | CUE | REV | IC002-51 | H | |
| REV | REV | STOP | IC002-52 | H | |
| SLOW | NOT SLOW | SLOW | IC002-22 | H | |
| AUTO (HEAD SWITCHING) | obey MPU | obey RF | IC002-38 | L | |
| ATF CS (MPU COMMUNICATION) | COMMUNICATION OK | STOP | IC002-43 | "STOP" | |
| RP PB MODE | REC | PB EE(STOP) | IC002-44 | | |
| FLYING ERASE ON | ON | OFF | IC002-29 | H | |
| JOG | NORMAL PB | Variable speed playback | IC002-9 | L | |

Mechanical mode is changed from STOP to FF/REW position by Control Motor.

It is necessary to operate the brake Solenoid in FF/REW position for releasing the brake.

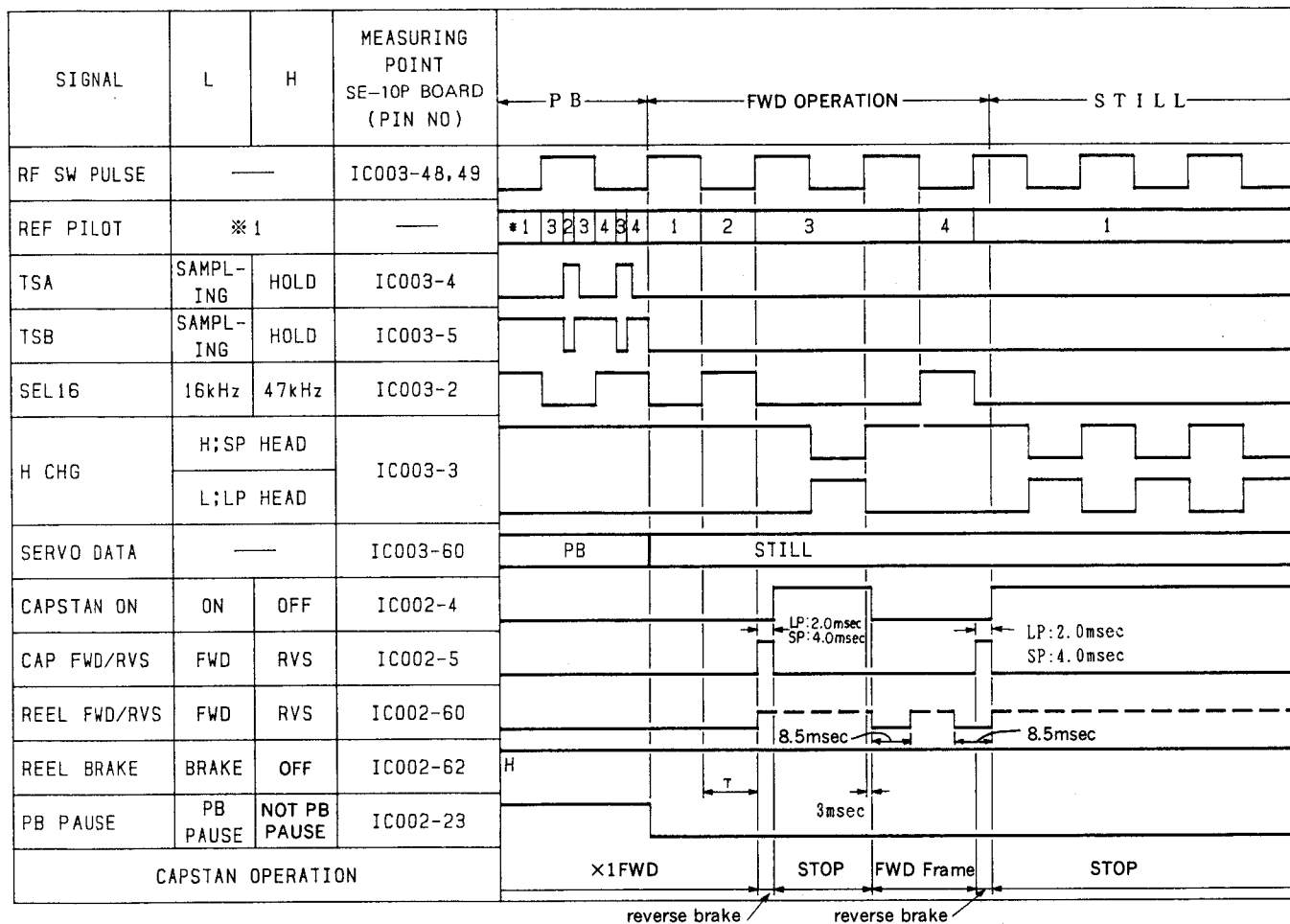
100msec

brake solenoid on

drum turns

Tape speed is activated gradually by PWM Drive.

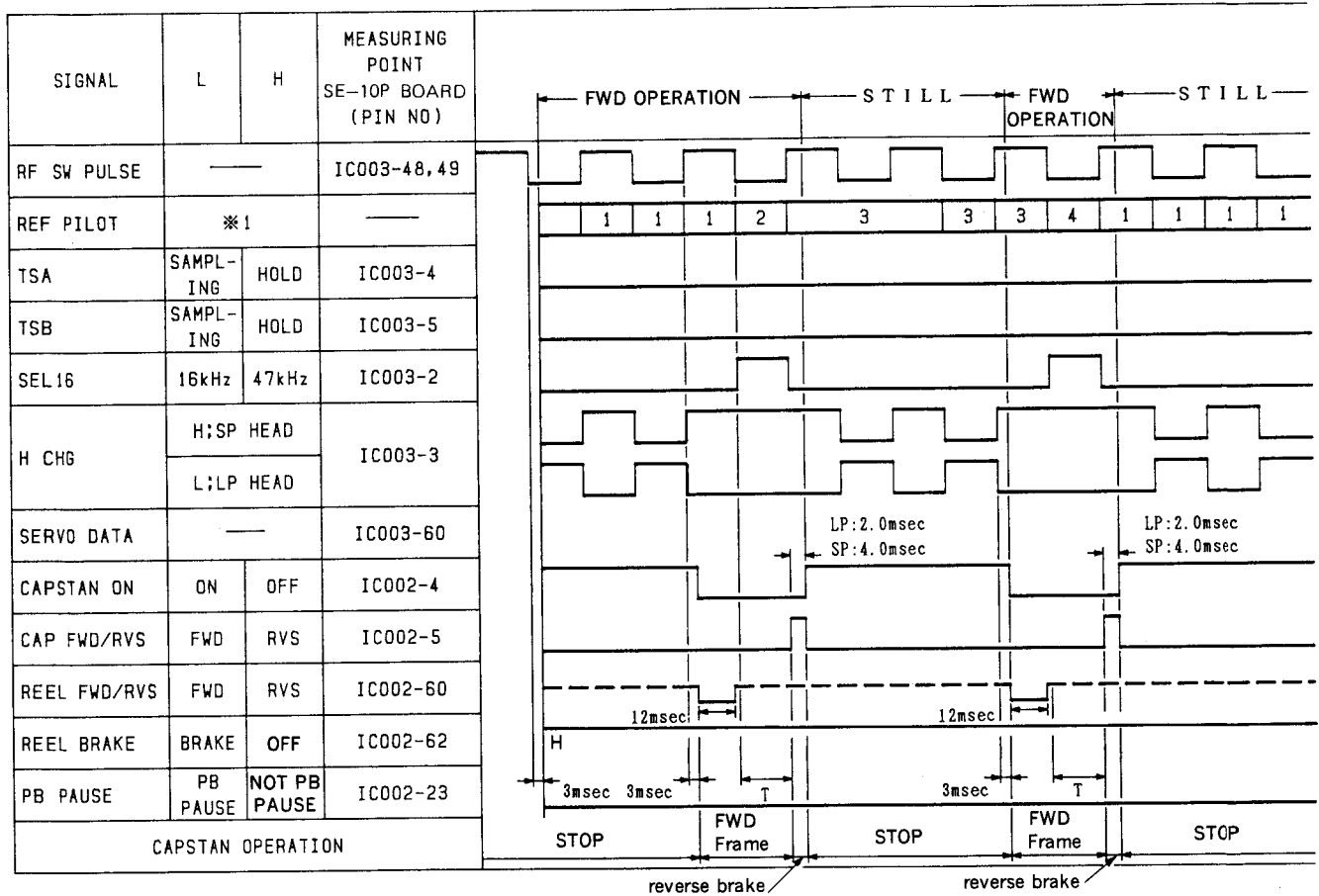
9. PB → STILL



(※1) Selects the REF PILOT Frequency by SEL1 (IC003-④) and SEL2 (IC003-②). T = 5.0 – 21.0msec Center 13.0msec

| FREQUENCY | S E L 1 | S E L 2 |
|-----------|---------|---------|
| 1 | H | H |
| 2 | L | H |
| 3 | H | L |
| 4 | L | L |

10. FWD SLOW or FWD FRAME

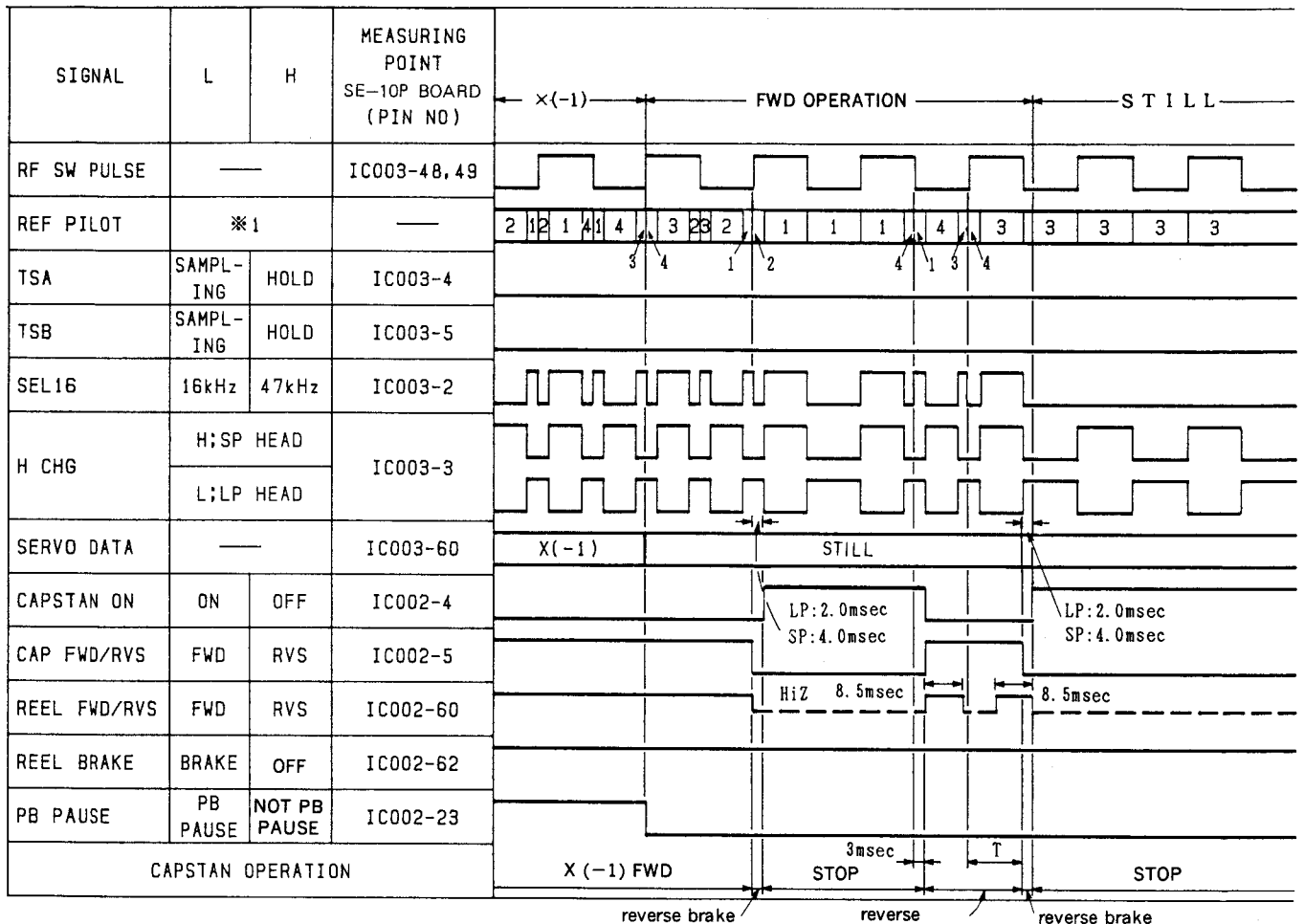


(* 1) Selects the REF PILOT Frequency by SEL1 (IC003-④) and SEL2 (IC003-②).

| FREQUENCY | SEL 1 | SEL 2 |
|-----------|-------|-------|
| 1 | H | H |
| 2 | L | L |
| 3 | H | L |
| 4 | L | L |

T = 8.5-24.5msec
Center 16.5msec

11. X(-1) → STILL

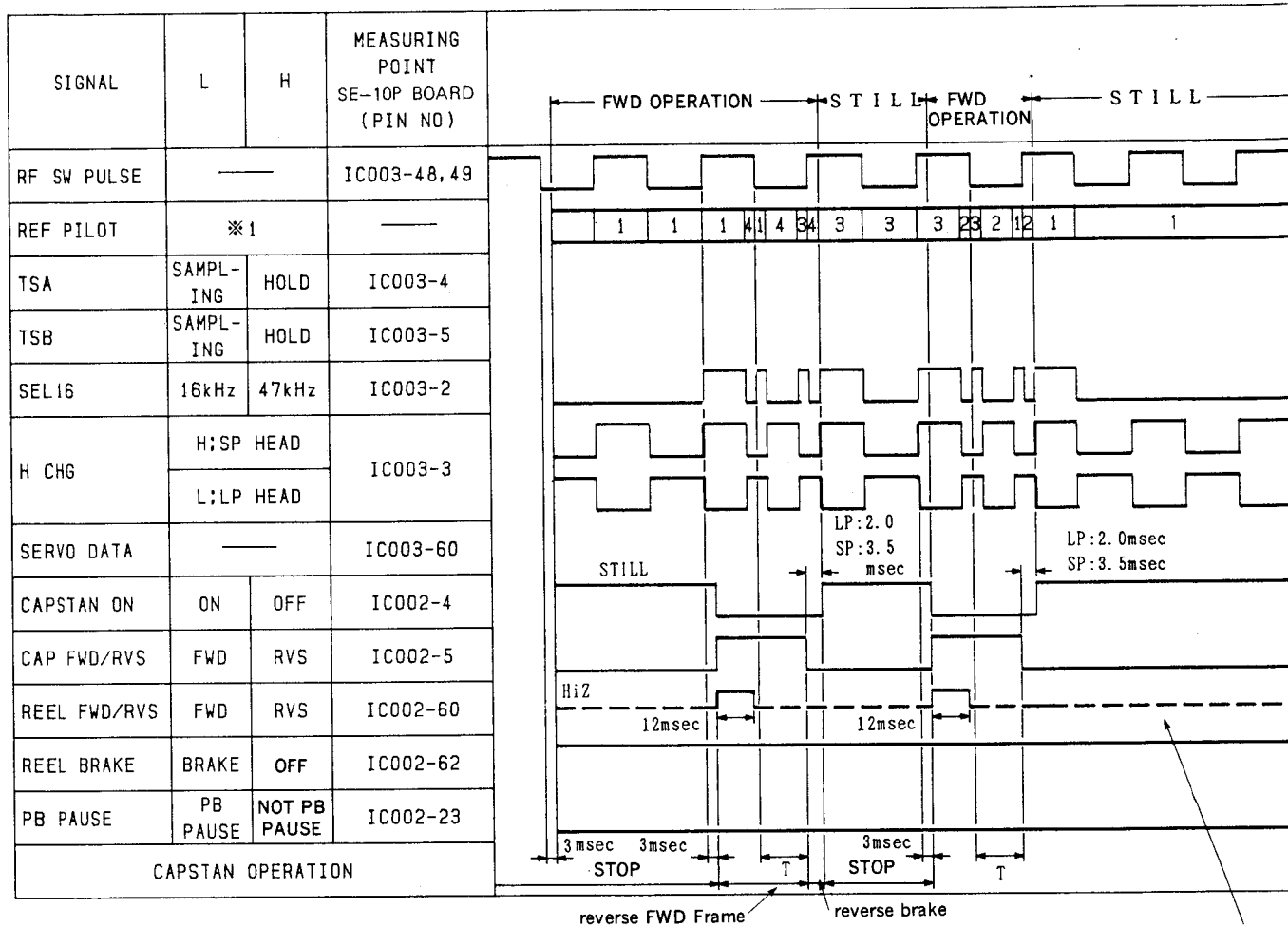


(* 1) Selects the REF PILOT Frequency by SEL1 (IC003-4) and SEL2 (IC003-2).

T=5.0-21.0msec
Center 13.0msec

| FREQUENCY | SEL 1 | SEL 2 |
|-----------|-------|-------|
| 1 | H | H |
| 2 | L | L |
| 3 | H | L |
| 4 | L | L |

12. RVS SLOW or RVS FRAME



(* 1) Selects the REF PILOT Frequency by SEL1 (IC003-64) and SEL2 (IC003-2).

Reel control becomes dotted line when
STILL/PB PAUSE → RVS SLOW/F.RAME.
T=8.5-24.5msec
Center 16.5msec

| FREQUENCY | S E L 1 | S E L 2 |
|-----------|---------|---------|
| 1 | H | H |
| 2 | L | L |
| 3 | H | L |
| 4 | L | L |

SECTION 3

PERIODIC CHECK AND MAINTENANCE

It is recommended that the following periodic check and maintenance schedule are employed in order to obtain maximum performance of the unit and longer tape life.

3-1. MAINTENANCE AFTER REPAIRS

Perform the following maintenance after repair regardless the operating hours of the unit.

(1) Cleaning of the Rotary Upper Drum

- Press the cleaning piece moistend with cleaning fluid lightly against the Rotary Upper Drum and turn slowly the Upper Drum counterclockwise with a hand.

Note: Never turn the Upper Drum by the electric power and never turn the Upper Drum clockwise with a hand. Never move the cleaning piece in the vertical direction of head tips in the cleaning. It tends to damage the video head tips. Please follow the instruction above for cleaning.

2) Cleaning of Tape Running System (fig.1)

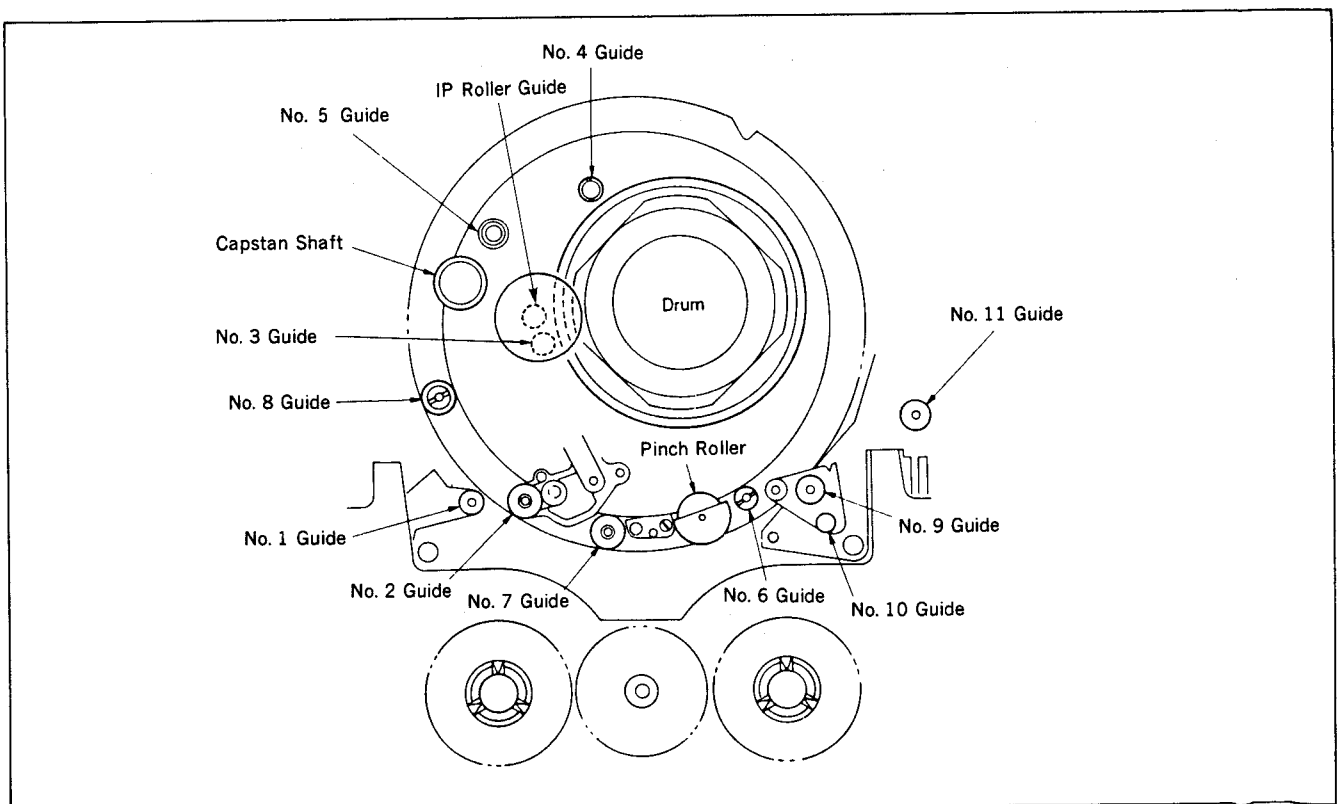
- Put the cassette compartment into the EJECT completion mode and clean the tape running system (No.1 thru No.11 Guides, Capstan Shaft, Pinch Rolloer and IP Roller Guide) with cleaning piece moistend with the clearing the fluid.

(3) Cleaning of Drive System

- Clean the Drive system (reel table surface, belt and timing belt) with cleaning piece moistend with the cleaning fluid.

3-2. PERIODIC CHECK

Perform the maintenance checks described separately in accordance with the operational hour of the unit.



3-3. HOURS METER

The Time Counter of the Front Panel can display the accumulated rotation time of the Upper Drum and the accumulated power-on time.

How to put the Time Counter Display into the Hours Metermode, please refer to Section 2-16.

The Hours Meter has two display modes as follows:

MENU No.205: HOURS METER (DRUM)

Rotation time of the Upper Drum

MENU NO.206: HOURS METER

Power-on time

The periodic check and maintenance use MENU No.205.

Refer to the next page for the periodic check list.

○ : Cleaning ◆ : Replacement ◇ : Checking ■ : Oiling

| Location | | | Hours of Use (H) : MENU No.205 (Drum rotation) | | | | | | | | | | Reference Section |
|-------------------|----------------------------------|--------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| | Parts Name | Parts No. | 500 | 1,000 | 1,500 | 2,000 | 2,500 | 3,000 | 3,500 | 4,000 | 4,500 | 5,000 | |
| Tape Path | Tape Path surface | — | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | 3-1 |
| | Upper Drum Ass'y (DGR-68-R) | A-7049-328-A | ○ | ◆ | ○ | ◆ | ○ | — | ○ | ◆ | ○ | ◆ | 4-2 |
| | Drum Ass'y (DGH-68A-R) | A-7048-389-A | ○ | ○ | ○ | ○ | ○ | ◆ | ○ | ○ | ○ | ○ | 4-3 |
| | Pinch Roller Arm Ass'y | X-3686-648-1 | ○ | ◆ | ○ | ◆ | ○ | ◆ | ○ | ◆ | ○ | ◆ | 4-5 |
| | (Note 4 :) Capstan motor | 8-835-364-01 | — | ■ | — | ■ | — | ◆ | — | ■ | — | ■ | — |
| Drive System | Threading motor belt | 3-686-546-01 | ◇ | ◇ | ◇ | ◆ | ◇ | ◇ | ◇ | ◆ | ◇ | ◇ | 4-7 |
| | Blake plunger | 1-454-377-31 | — | — | — | ○ | — | — | — | ○ | — | — | 4-20 |
| | Threading motor | A-7040-065-A | — | — | — | — | — | ◆ | — | — | — | — | 4-7 |
| | M-switch Assy | A-7040-159-A | — | — | — | — | — | ◆ | — | — | — | — | 4-21 |
| | Reel motor | 8-835-304-11 | — | — | — | — | — | ◆ | — | — | — | — | 4-8 |
| | T Reel Table Ass'y | X-3711-998-1 | — | — | — | — | — | ◆ | — | — | — | — | 4-14 |
| | S Reel Table Ass'y | X-3713-427-1 | — | — | — | — | — | ◆ | — | — | — | — | 4-13 |
| | T·Main Brake Ass'y | X-3686-574-1 | — | — | — | ◆ | — | — | — | ◆ | — | — | — |
| | S·Main Brake Ass'y | X-3711-991-1 | — | — | — | ◆ | — | — | — | ◆ | — | — | — |
| | T·Soft Brake Ass'y | X-3711-987-2 | — | — | — | ◆ | — | — | — | ◆ | — | — | — |
| | REW Brake Ass'y | X-3711-993-1 | — | — | — | ◆ | — | — | — | ◆ | — | — | — |
| | Tension Regulator Band Ass'y | X-3686-531-1 | — | — | — | ◆ | — | — | — | ◆ | — | — | 4-17 |
| | Roller (Cassette-up Compartment) | 3-713-466-01 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | — |
| Performance Check | Abnormal-noise | — | ◇ | ◇ | ◇ | ◇ | ◇ | ◇ | ◇ | ◇ | ◇ | ◇ | — |
| | FWD Back tension measurement | — | — | ◇ | — | ◇ | — | ◇ | — | ◇ | — | ◇ | 5-5 |
| | Brake torque measurement | — | — | ◇ | — | ◇ | — | ◇ | — | ◇ | — | ◇ | 5-1, 5-2, 5-3 |
| | FWD, RVS torque measurement | — | — | ◇ | — | ◇ | — | ◇ | — | ◇ | — | ◇ | 5-4 |

Note 1 : When overhauling the unit, refer to the items above for replacement of parts.

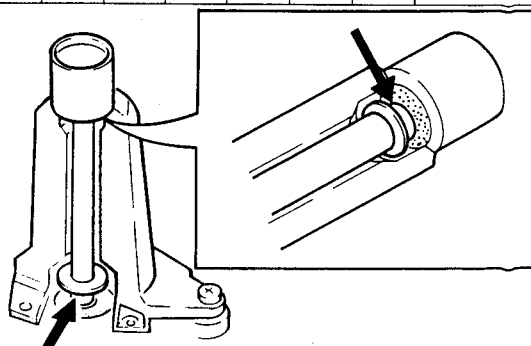
Note 2 : The time of parts replacement will differ with operating environment

Note 3 : Be sure to clean the tape path surface in repairing.

Note 4 : Oiling to the Capstan Shaft Bearing.

Apply one-half drop of oil to the Capstan Shaft Bearing after removing the Chapstan Motor.

(Never apply oil to the tape path surface.)



3-4. HOW TO USE THE CLEANING TAPE

Cleaning Tape: V8-6CLHSP (supplied accessory)
V8-25CLH (option)

. Never use the cleaning tape, V8-25CLN.

- (1) When the rotary heads clog and head cleaning described Section 3-1 can not clean the heads, use the cleaning tape.

If use the cleaning tape except for the above, it will shorten the life of the heads.

- (2) The one time cleaning is within fifteen seconds and use the cleaning tape only one time after rewinding.

3-5. OTHERS

(1) Sony oil

- . Be sure to use the Sony oil as the lubrication oil. (If other oil is used, various troubles due to different viscosity tends to be caused.)

Sony oil: Part No. 7-661-018-18

- . Use the Sony oil in which dust or other foreign material have not mixed for lubricating the bearing. (If foreign material is in the oil, wear or burning of the bearing tends to be caused.)

- . One drop of oil means the amount which sticks to a 2 mm diameter rod, as shown in the figure.

(2) Sony grease

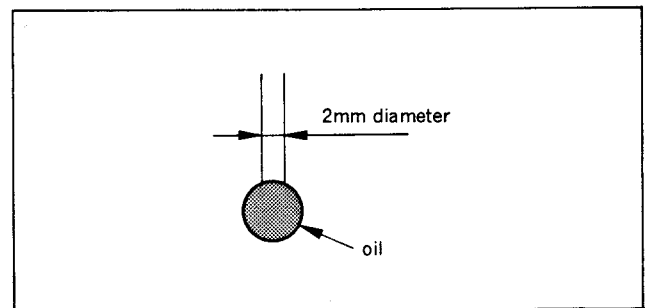
- . Be sure to use the Sony grease as the lubrication grease.

Sony grease: Part No. 7-662-001-62
(SGL-501)

(3) MOLYTONE GREASE

- . Be sure to use the MOLYTONE GREASE as the lubrication grease.

MOLYTONE GREASE: Part No. 7-662-001-41
(No. 320)



SECTION 4 REPLACEMENT OF MAJOR PARTS

PREPARATION FOR REPLACEMENT OF PARTS

Replacement of some parts use the *Mode Selector. The mode (☐ marked mode) in the replacement procedure is set by pressing the button on the Mode Selector.

*It is a kind of tool.

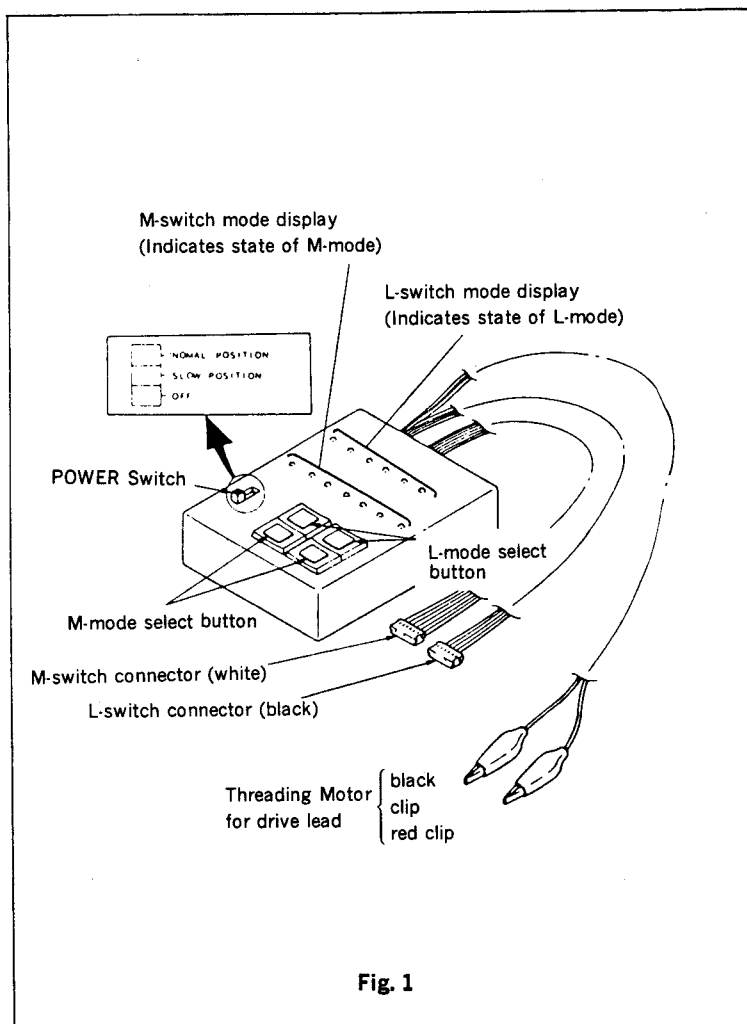
Part No. : J-6080-825-A

. Operation of Mode selector

1. Location of parts and controls (fig. 1)

2. Connection (fig. 2)

- (1) Remove the Front Panel, Bottom Plate and Top Panel referring to Section 2-1.
- (2) Remove the Meeha Deck Block from the unit referring to Section 2-2.
- (3) Remove the MB-19, MD-23(P), HK-5 and SE-10(P) Boards from the unit referring to Sections 2-5-5, 2-5-6 and 2-5-7.
- (4) Disconnect the connectors (6P) on the MS-4 and LS-9 Boards.
- (5) Connect the 6P connector (six harness, white) for the M-switch of the Mode Selector to the MS-4 Board.
- (6) Connect the 6P connector (four harness, black) for the L-switch of the Mode Selector to the LS-9 Board.
- (7) Remove the cover of the Threading Motor.
- (8) Connect the red clip of the Threading Motor driver lead to the red terminal of the Threading Motor and the black clip to the brown terminal.



3. Note

- (1) When operating L-switch, be sure to set the mode of M-switch to LOADING/ UNLOADING mode.
- (2) When operating M-switch, be sure to set the mode of L-switch to LOADING TOP or LOADING END mode.

4. Operation

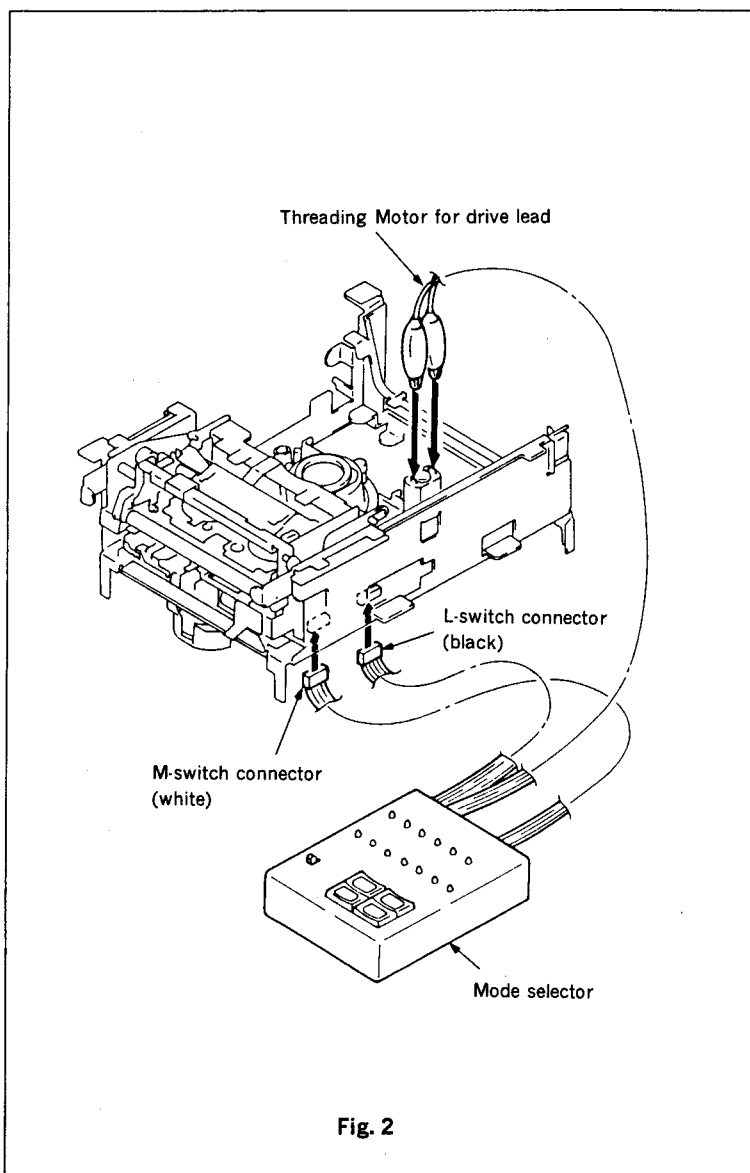
When L-mode or M-mode does not set in each mode during mode selection, the BLANK position lights up.

(1) L-mode

- . When the right side L-mode select button is pressed continuously, the mode changes from LOADING TOP to LOADING END in order from left.
- . When the mode changes from LOADING END to LOADING TOP in order, press the left side L-mode select button continuously.
- . When the power switch is set to the SLOW position, the L-mode operates more slowly than the NORMAL position.

(2) M-mode

- . When performing EJECT, set the mode of L-switch to LOADING TOP.
- . When performing from FF/REW to RVS or from RVS to FF/REW, set the mode of L-switch to LOADING END.
- . When the right side M-mode select button is pressed continuously, the mode changes from EJECT to RVS in order from left.
- . When the mode changes from RVS to EJECT, press the left side M-mode select button continuously.



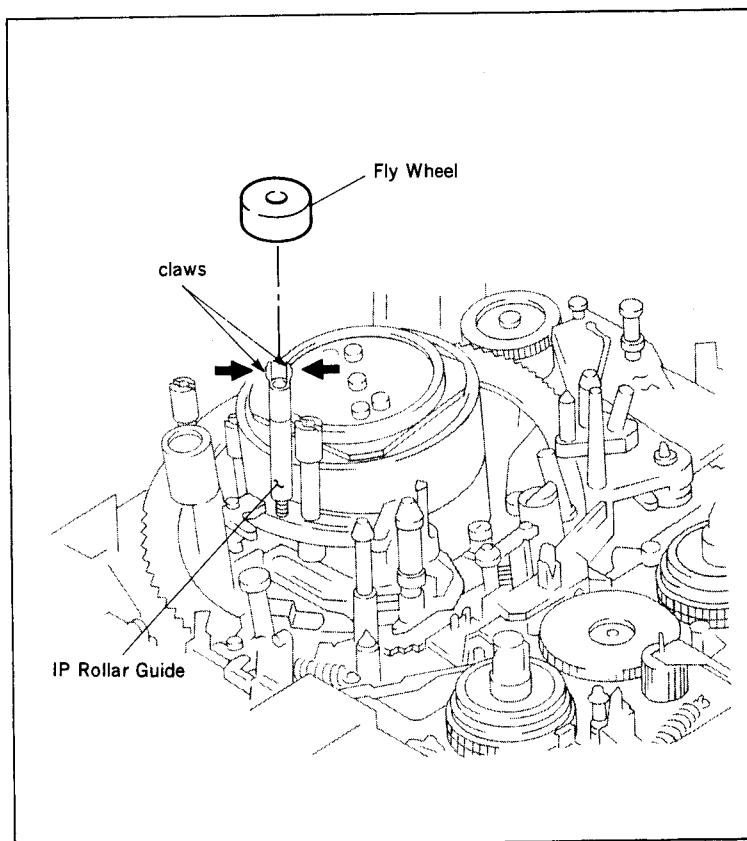
4-1. REPLACEMENT OF THE FLY WHEEL

Removal:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) Remove the Fly Wheel while picking the claws.

Installation:

- (1) Replace the Fly Wheel with a new one. Insert the Fly Wheel in the IP Rollar Guide from the big hole side until click sound can be heard.



4-2. REPLACEMENT OF THE ROTARY UPPER DRUM

- . The video heads can not be replaced as a single part. Replace the whole Rotary Upper Drum Assembly.
- . There is a relay PC Board (DH-13 Board) for the video and audio signals in the Rotary Upper Drum. It is not necessary to replace the DH-13 Board, if it is broken, replace the whole the Rotary Upper Drum Assembly.

Tools: Rotary Drum Tool (Ref No. J-11)
(It is packed together with the
Repair Rotary Upper Drum.)
L-shaped wrench
(across flat has 1.5 mm)

Removal:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) Remove the Fly Wheel reffering to Section 4-1.
- (3) Remove the two screws (M2 X 2.7) and remove the Dynamic Damper.
- (4) Unsolder the ten terminals at A positions. Check that the terminals which are projected out from the PC Board move freely with a pair of tweezers, etc. (fig. 1)
- (5) Remove the two screws (M2 X 5).
- (6) Install the tool A to the two screw holes of installing the Dynamic Damper with the two accessory supplied screws. Thread the accessory supplied hexagon screw into the center hole of the tool A, and remove the Rotary Upper Drum. (fig. 2)

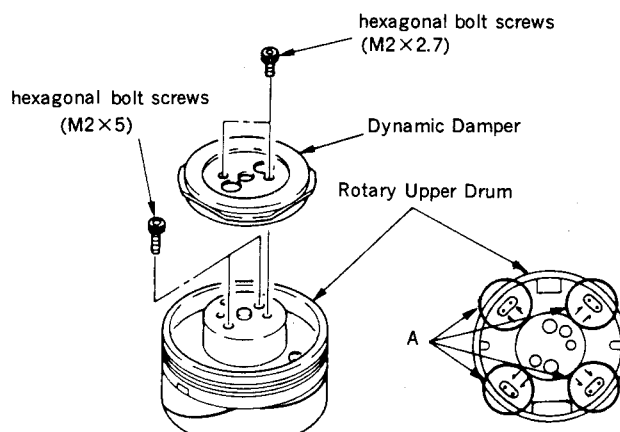


Fig. 1

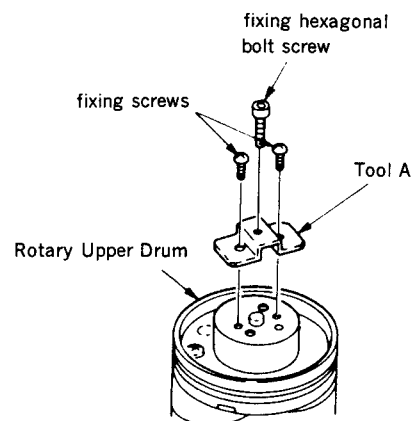


Fig. 2

Installation:

- (1) Clean the flange surface of the Lower Drum and the contact point of the new Rotary Upper Drum with a cleaning piece. Check that no dust or flaw are left.
- (2) While adjusting the positional relationship of the Rotary Upper Drum and positioning hole with the tool B, insert the Rotary Upper Drum lightly. At this time, Check that the terminals project out from the PC Board of the Rotary Upper Drum. When the terminals are caught, correct them with a pair of tweezers, etc.. Remove the tool B and lightly push the Rotary Upper Drum by hand. If the Rotary Upper Drum does not down to the bottom, thread the two fixing screws to the Rotary Upper Drum alternately, but do not tighten them. Insert the tool B in the positioning hole and check that the tool B can be inserted smoothly again. If the tool B can not be inserted, loosen the two screws (M 2 x 5) and adjust the position of the Rotary Upper Drum by precision screwdriver. (fig. 3 and 4)
- (3) Tighten the two hexagon screws (M2 X 5).
- (4) Assemble the parts with Removal Steps (1) to (4) in reverse order.

Note: . Do not tighten all the screws too strongly.
 . Be carefull not to flow solder below the PC Board.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

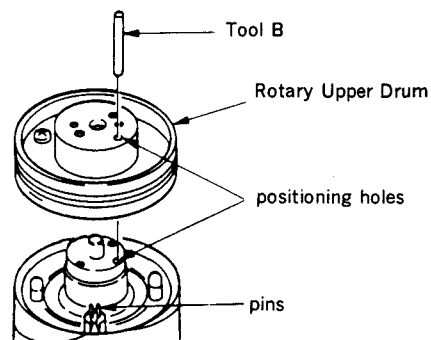


Fig. 3

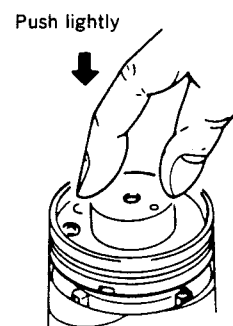


Fig. 4

4-3. REPLACEMENT OF THE DRUM ASSEMBLY

Removal:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (3) Remove the Fly Wheel referring to Section 4-1.
- (4) Open the HK-5 and SE-10(P) Boards referring to Section 2-5-6 and 2-5-7.
- (5) Remove the two fixing screws and remove the Flexible Cover. (fig. 1)
- (6) Disconnect the connectors (CN805, 806) on the MD-23(P) Board and disconnect the connector (CN001) on the FR-43 Board.
- (7) Remove the fixing screw and remove the Shaft Ground Terminal.
- (8) Remove the two fixing screws and remove the Drum Assembly. (fig. 2)

Note: At this time, be careful that the Drum Assembly does not touch the No. 3 Guide and the IP Roller Guide, etc..

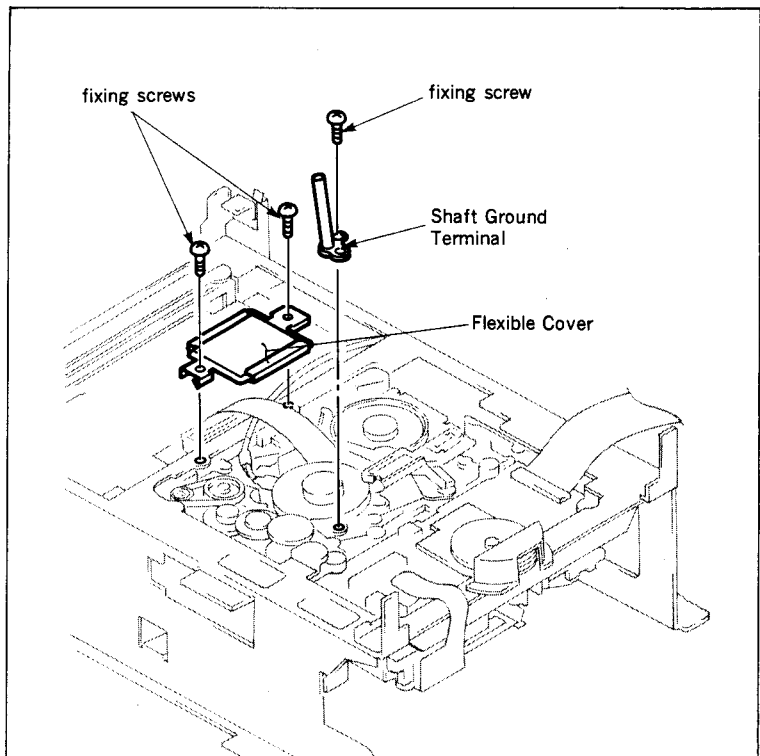


Fig. 1

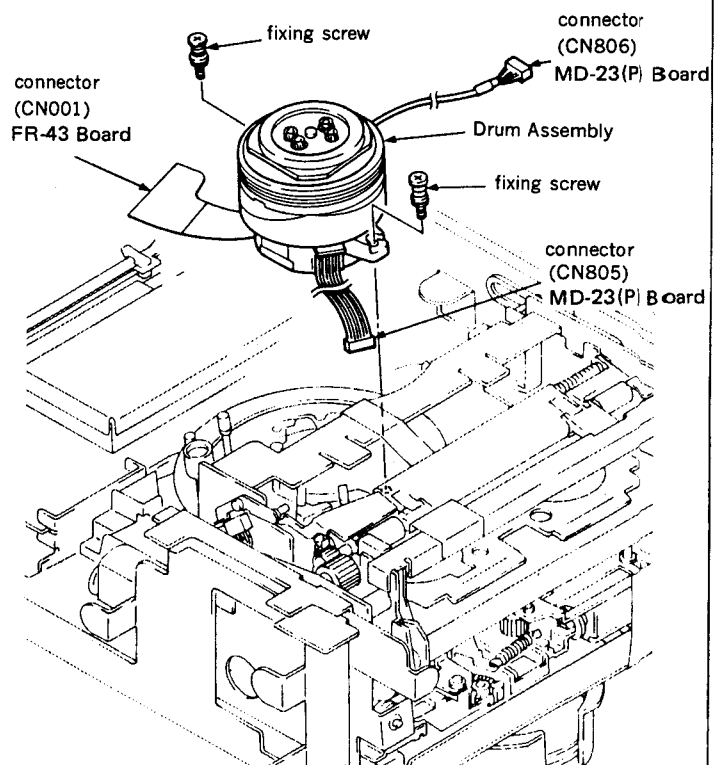


Fig. 2

Installation:

- (1) Clean the flange surface of the new Drum Assembly and the contact point of the mechanical chassis with a cleaning piece.
- (2) Set the Drum Assembly to the two projections of the Mecha chassis and tighten the two fixing screws.

Note: At this time, be careful that the screwdriver does not touch the head chips. (fig. 3)

- (3) Peel off the tape from the Rotor and FG Stator of the Drum Assembly.
- (4) Clean the shaft of the Drum Assembly with a cleaning piece.
- (5) Clean the Shaft Ground Terminal which contact to the Drum Shaft with a cleaning piece and set the Shaft Ground Terminal to the projection of mechanical chassis and tighten the fixing screw.
- (6) Assemble the parts with Removal Steps (1) to (6) in reverse order.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

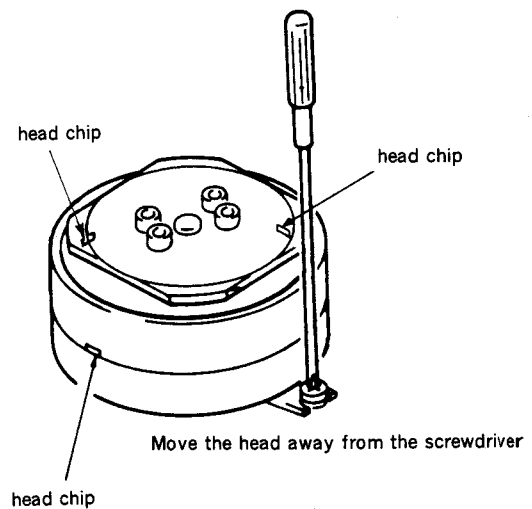


Fig. 3

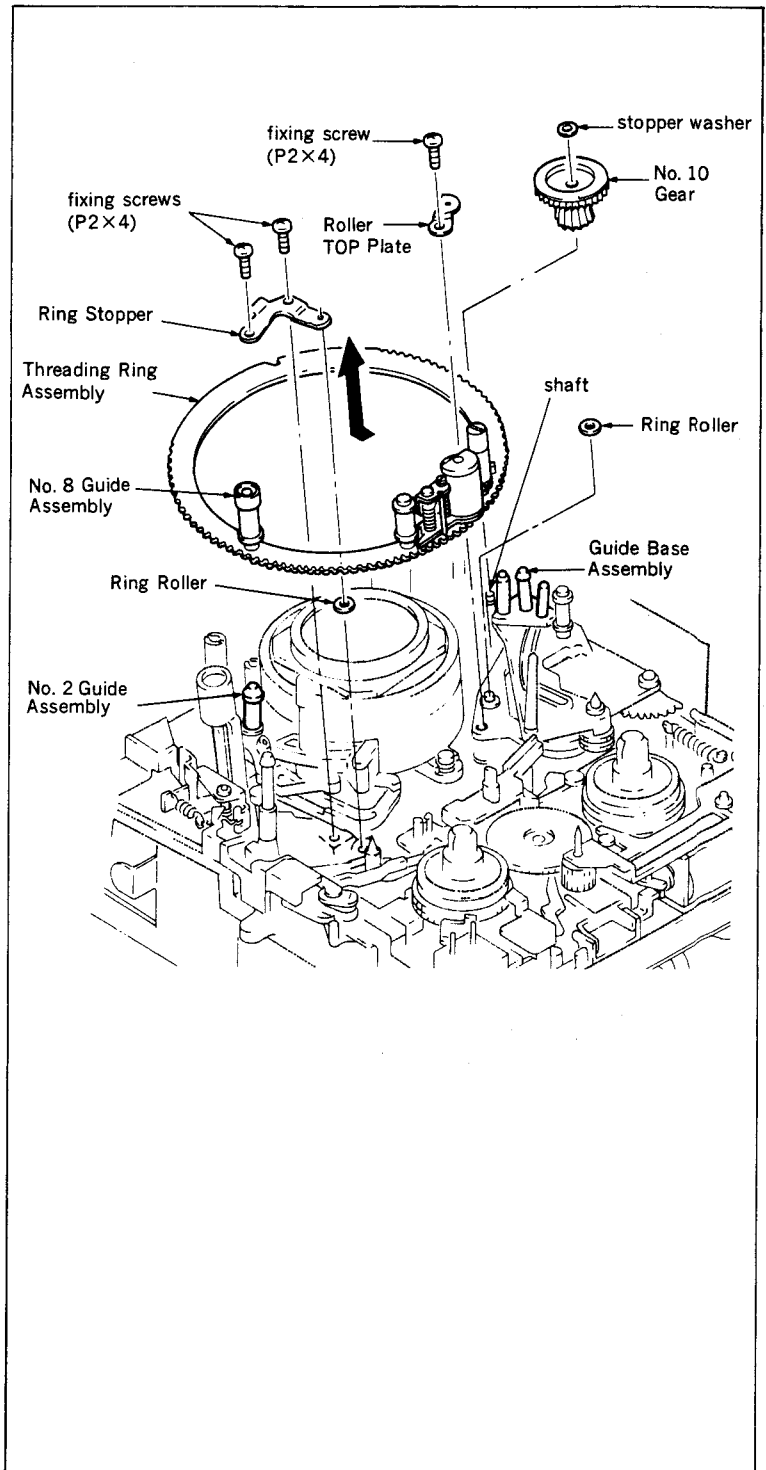
4-4. REPLACEMENT OF THE THREADING RING ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
No. 10 Gear Phase Tool
(Ref. No. J-9)
Sony Oil

Removal:

- (1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (2) Press the L-mode select button of the Mode Selector and move the Guide Base Assembly and the No. 2 Guide Assembly until just before it is locked. (Do not move the Threading Ring Assembly.)
- (3) Remove the stopper washer and remove the No. 10 Gear Assembly.
- (4) Remove the fixing screw and remove the Roller Top Plate and Ring Roller.
- (5) Remove the two fixing screws and remove the Ring Stopper and Ring Roller.
- (6) Remove the Threading Ring Assembly in the direction of the arrow.

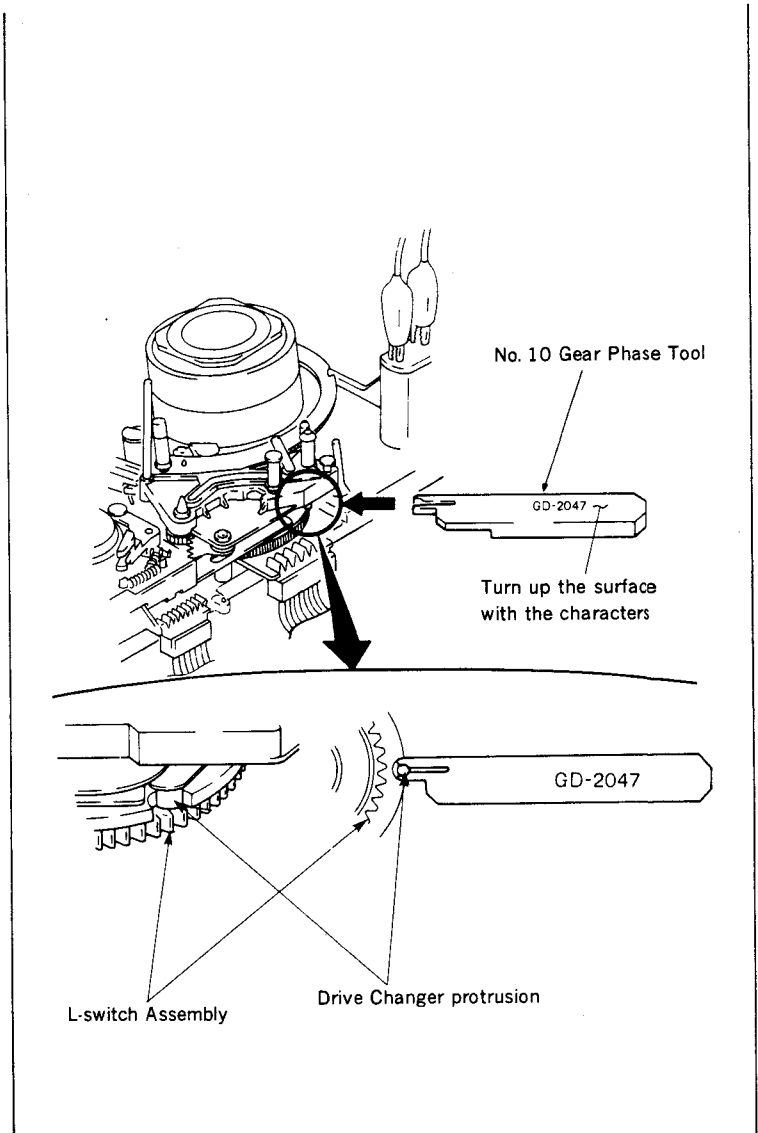
Note: When removing the Threading Ring Assembly, be careful that the Threading Ring Assembly does not touch the Drum and Capstan Shaft.



Installation:

- (1) Replace the Threading Ring Assembly with a new one.
- (2) Install the Threading Ring Assembly so that it puts into the unthreading mode. The Pinch Roller Arm Assembly is the Reel Table side. (Check that each assembly is put into the Step (2) at removal procedure.)
- (3) Install the Ring Roller and Ring Stopper and tighten them with two fixing screws. (Check that the No. 8 Guide Assembly is in front of Ring Stopper.)
- (4) Install the Ring Roller and Roller Top Plate and tighten them with the screw. (Check that the Threading Ring Assembly matches the three Ring Rollers.)
- (5) Apply a half drop of oil on the shaft.
- (6) Check that the pin of the Drive Changer Assembly is into the notch of the L-switch Assembly. Insert the No. 10 Gear Phase Tool (Ref. No. J-9) into the notch of the L-SW Assembly.
- (7) While pushing the No. 8 Guide Assembly against the Ring Stopper, install the No.10 Gear Assembly with a stopper washer.
- (8) Pull out the No. 10 Gear Phase Tool.
- (9) Press the L-mode select button of the Mode Selector and set to the LOADING TOP mode.
- (10) Install the Cassette-up Compartment Assembly referring to Section 2-3.

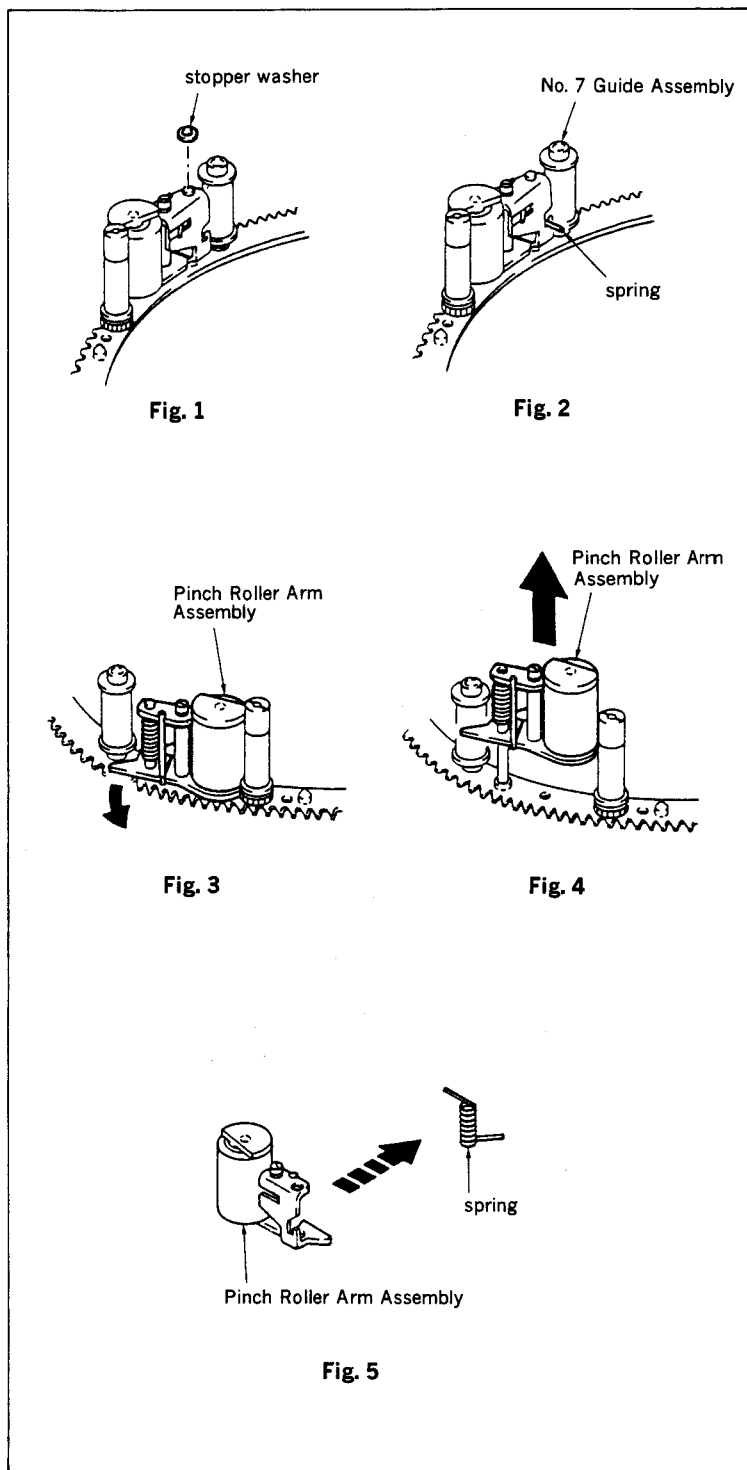
Note: After replacement, perform the Tape Path Adjustment referring to Section 6.



4-5. REPLACEMENT OF THE PINCH ROLLER ARM ASSEMBLY

Removal:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (3) Remove the stopper washer. (fig. 1)
- (4) Hook the spring which is hooked to the No. 7 Guide Assembly to the groove of the Pinch Roller Arm (fig. 2)
- (5) Turn the Pinch Roller Arm Assembly in the direction of the arrow. (fig. 3)
- (6) Remove the Pinch Roller Arm Assembly in the direction of the arrow. (fig. 4)
- (7) Remove the spring. (fig. 5)



Installation:

- (1) Replace the Pinch Roller Arm Assembly with a new one.
- (2) Install the spring and hook the ends of the spring to the Pinch Roller Arm Assembly. (fig. 1)
- (3) Insert the end of the clip or another thin rod into the hole of the Pinch Roller Arm Assembly. (fig. 2 and 3)
- (4) Put the end of the clip to the shaft of the Threading Ring Assembly and install the Pinch Roller Assembly. (fig. 4 and 5)
- (5) Hook the end of the spring to the No. 7 Guide Assembly.
- At this time, check that the another end of the spring is hooked to "A". (fig. 6)
- (6) Assemble the parts with Removal Steps (1) to (3) in reverse order.

Note: After replacement, perform the Tape Path Check referring to Section 6-6.

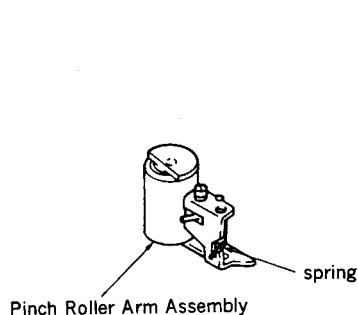


Fig. 1

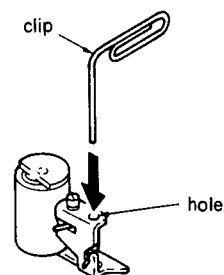


Fig. 2

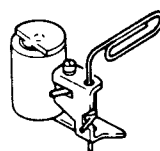


Fig. 3

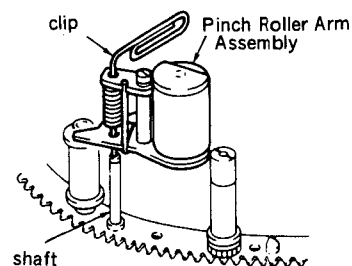


Fig. 4

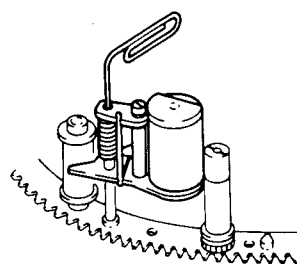


Fig. 5

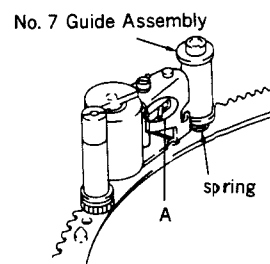


Fig. 6

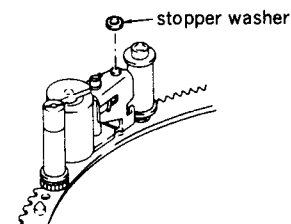


Fig. 7

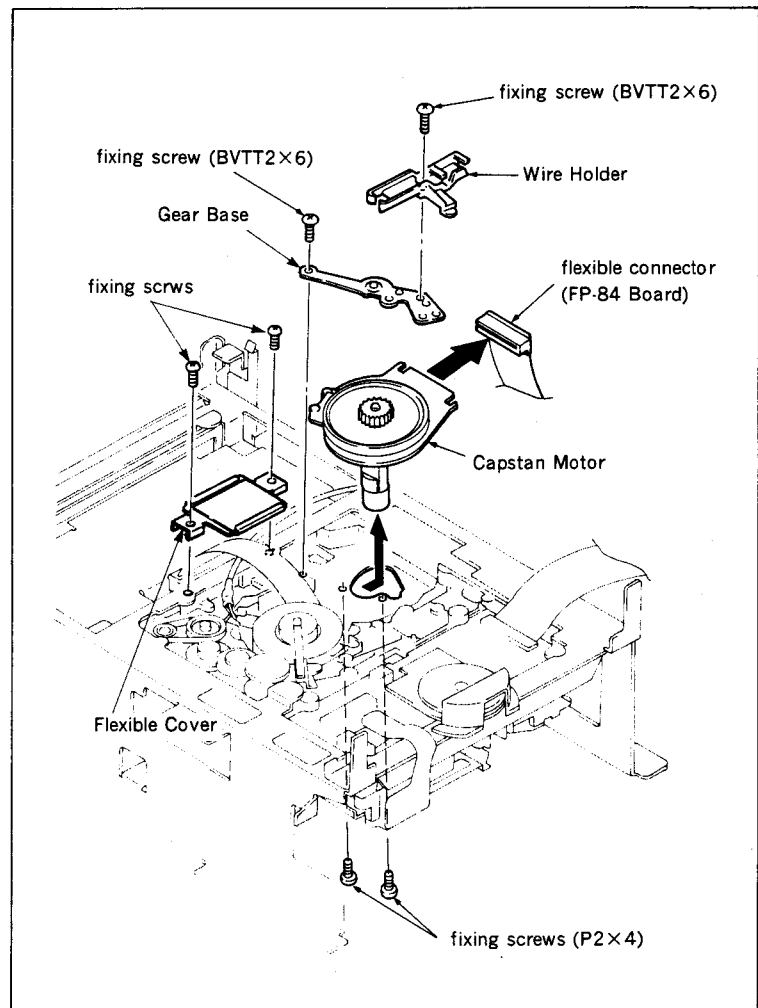
4-6. REPLACEMENT OF THE CAPSTAN MOTOR

Removal:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (3) Remove the Threading Ring Assembly referring to Section 4-4.
- (4) Open the HK-5 and SE-10(P) Boards referring to Sections 2-5-6 and 2-5-7.
- (5) Remove the two fixing screws and remove the Flexible Cover.
- (6) Remove the harness of the Capstan Motor from the Wire Holder.
- (7) Remove the fixing screw and remove the Wire Holder.
- (8) Remove the fixing screw and remove the Gear Base.
- (9) Disconnect the flexible connector of the Capstan Motor.
- (10) Remove the two fixing screws and remove the Capstan Motor in the direction of the arrow.

Installation:

- (1) Replace the Capstan Motor with a new one and assemble the parts with Removal Steps (1) to (10) in reverse order.



4-7. REPLACEMENT OF THE THREADING MOTOR ASSEMBLY

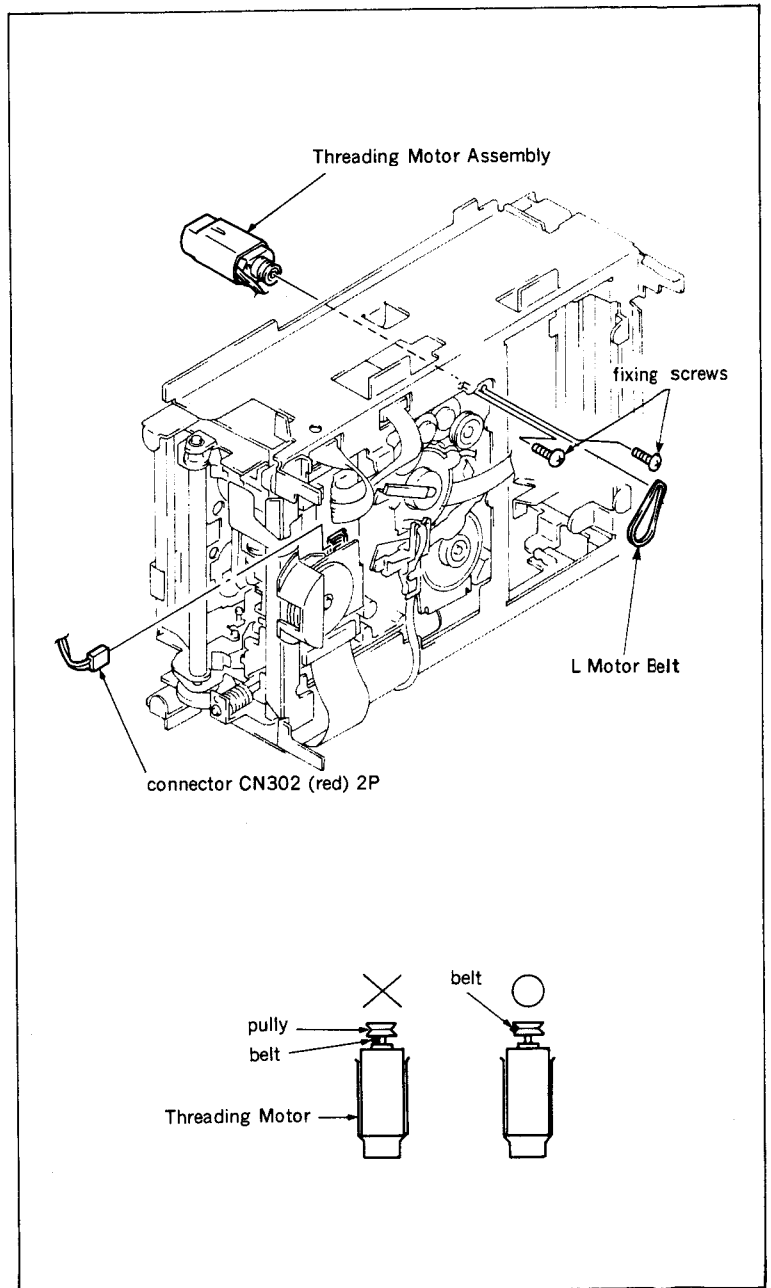
Removal:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) Open the HK-5 and SE-10(P) Boards referring to Section 2-5-6 and 2-5-7.
- (3) Remove the L Motor Belt.
- (4) Disconnect the connector (CN302) on the RS-31 Board.
- (5) Remove the two fixing screws and remove the Threading Motor Assembly.

Installation:

- (1) Replace the Threading Motor Assembly with a new one and assemble the parts with Removal Steps (1) to (5) in reverse order.

Note: Before installing the L Motor Belt, clean it with a cleaning piece and be sure to install the belt in the groove of pulley.



4-8. REPLACEMENT OF THE REEL MOTOR

Removal:

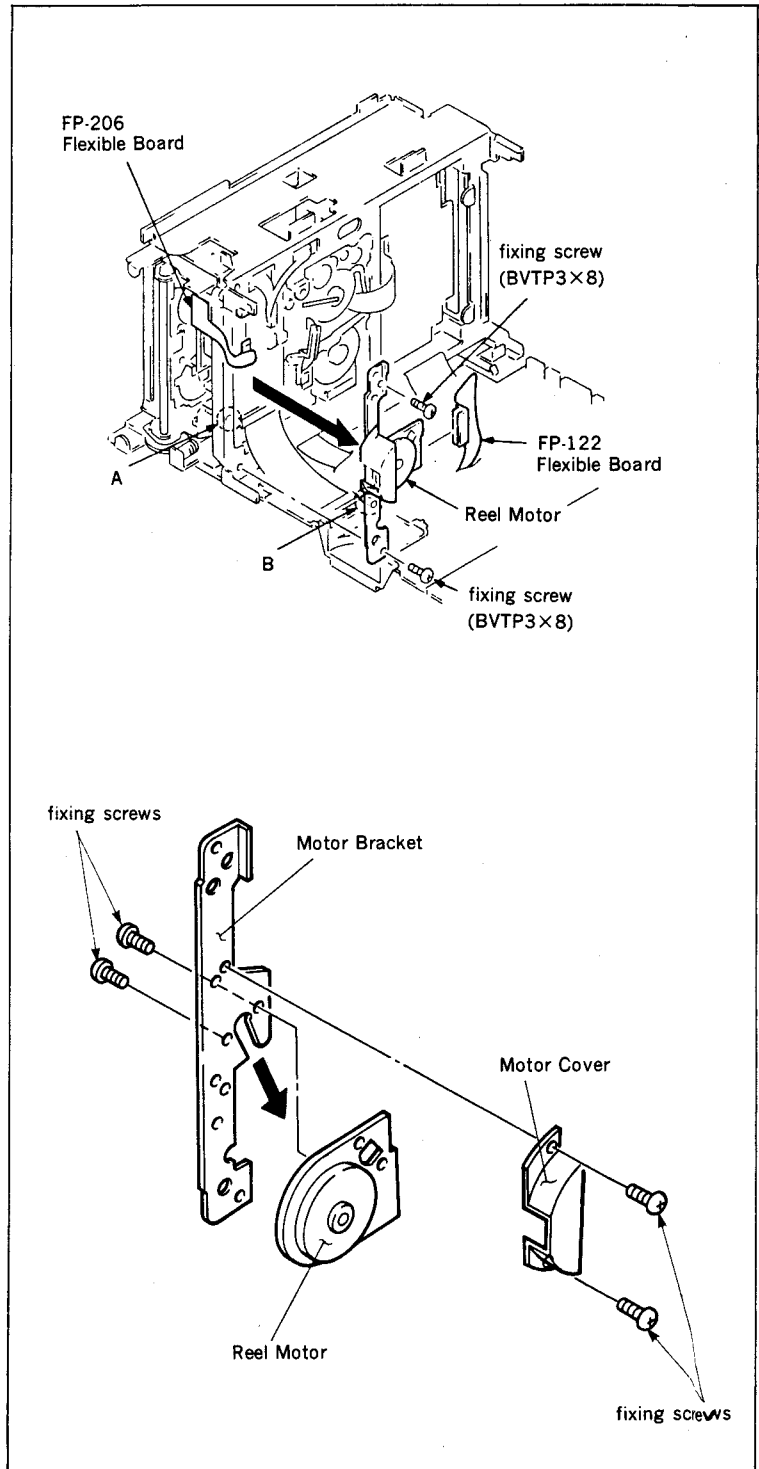
- (1) Open the HK-5 and SE-10(P) Boards referring to Section 2-5-6 and 2-5-7.
- (2) Remove the FP-122 Flexible Board from the PC Board of the Reel Motor.
- (3) Remove the FP-206 Flexible Board from the RS-31 Board.
- (4) Remove the two fixing screws of the Motor Bracket.
- (5) Insert a flatblade screwdriver into A, release the projection B and remove the Motor Bracket.

Note: If the Motor Bracket is removed by hand directly, it tends to damage the Motor Bracket.

- (6) Remove the two fixing screws and remove the Motor Cover from the Motor Bracket.
- (7) Remove the two fixing screws and remove the Reel Motor in the direction of the arrow.

Installation:

- (1) Replace the Reel Motor with a new one. Assemble the parts with Removal Steps (1) to (7) in reverse order.



4-9. REPLACEMENT OF THE No. 3 AND No. 4 GUIDES

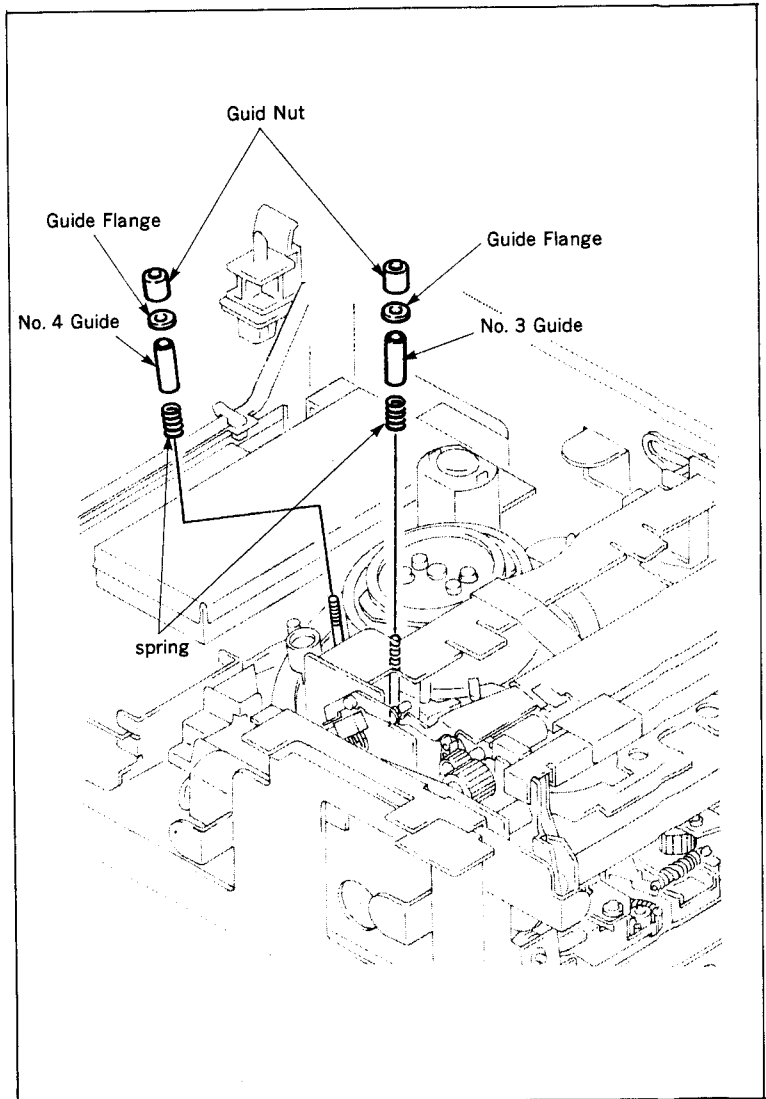
Removal:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) When replacing the No. 3 Guide, remove the Fly Wheel referring to Section 4-1.
- (3) Turn the Rotary Upper Drum counterclockwise and keep heads away from the No. 3 Guide or No. 4 Guide.
- (4) Remove the Guide Nut and remove the Guide Flange, No. 3 Guide (or No. 4 Guide) and spring.

Installation:

- (1) Replace the No. 3 Guide (or No. 4 Guide) with a new one.
- (2) Assemble the parts with Removal Steps (1) to (4) in reverse order.

Note: After replacement, adjust the height of the No. 3 and No. 4 Guides to meet the tape path condition of Section 6-6-3 by turning the Guide Nut.



4-10. REPLACEMENT OF THE ENTRANCE GUIDE (P) ASSEMBLY (No. 2 GUIDE ASSEMBLY)

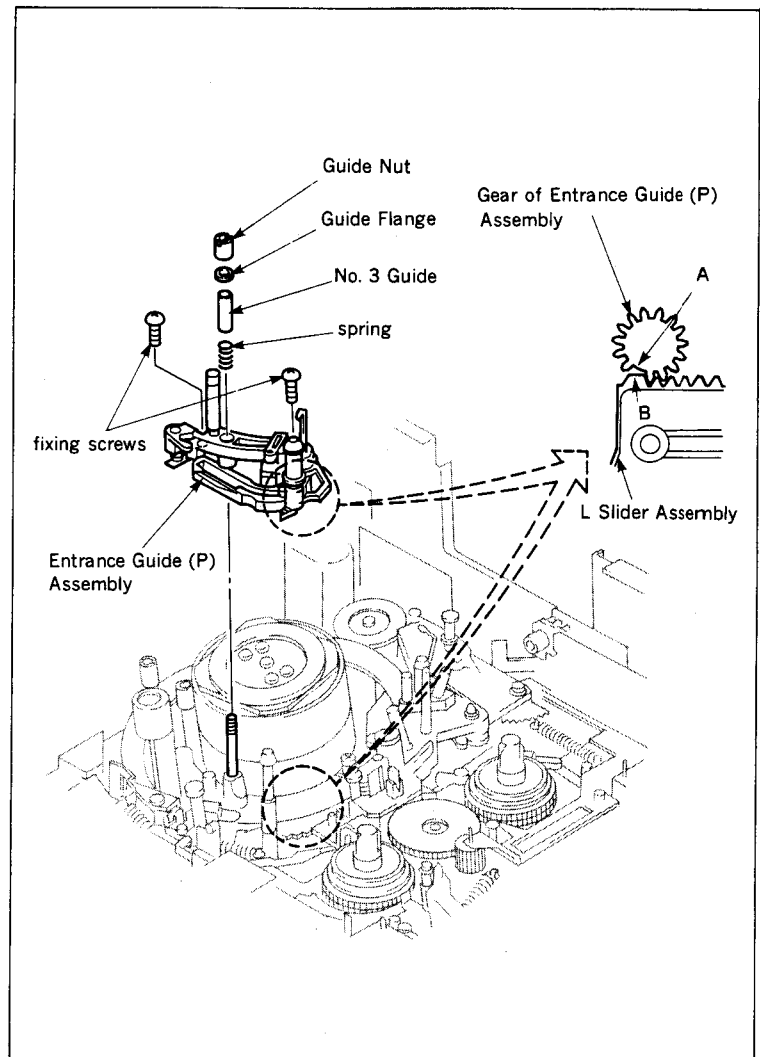
Removal:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (3) Remove the Fly Wheel referring to Section 4-1.
- (4) Turn the Rotary Upper Drum counterclockwise and keep heads away from the Entrance Guide (P) Assembly.
- (5) Remove the Guide Nut and remove the Guide Flange, No. 3 Guide and spring.
- (6) Remove the two fixing screws and remove the Entrance Guide (P) Assembly.

Installation:

- (1) Check that the mechanical block is put into the **LOADING TOP** mode.
- (2) Replace the Entrance Guide (P) Assembly with a new one.
- (3) Engage the Entrance Guide (P) Assembly and L Slider Assembly so that their flat portions A and B are matched, and tighten it with two fixing screws.
- (4) Assemble the parts with Removal Steps (3) and (5) in reverse order.
- (5) Perform the FWD running more than two minutes and then perform the FWD Back Tension Adjustment referring to Section 5-5.
- (6) Assemble the parts with Removal Steps (1) and (2) in reverse order.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.



4-11. REPLACEMENT OF THE SLANT GUIDE ASSEMBLY

Tool: Mode Selector (Ref. No. J-13)

Removal:

- (1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (2) Remove the Threading Ring Assembly referring to Section 4-4.
- (3) Remove the fixing screw and E ring.
- (4) Remove the Slant Guide Block Assembly.

Installation:

- (1) Operate the L-mode select button of the Mode Selector and align the right edge of the L Slider Assembly and the right side of the Lock Slider M Assembly. (fig. 2)

Note: At this time, check that the position of the notch on the Slant Guide Drive Gear is placed as shown in figure 2.

- (2) Assemble the Guide Base Assembly of new Slant Guide Block Assembly the position of the *unthreading end.
*The Guide Base Assembly is the Reel Table side.
- (3) Assemble the parts with Removal Steps (1) to (3) in reverse order.

Note: After replacement, perform the Tape Path Check referring to Section 6-6.

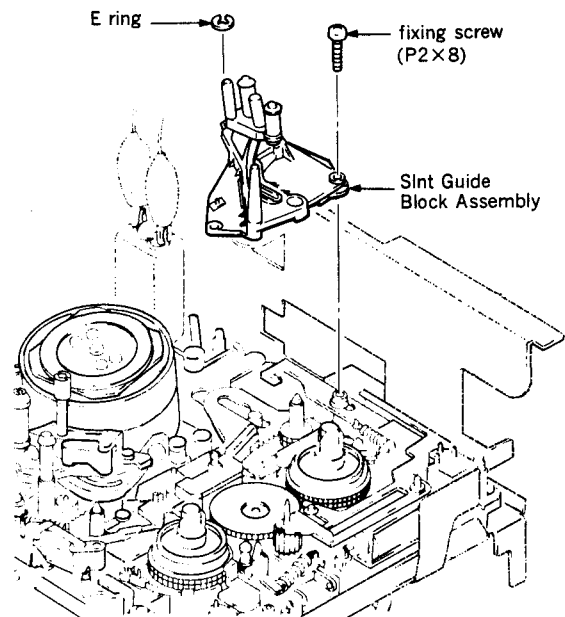


Fig. 1

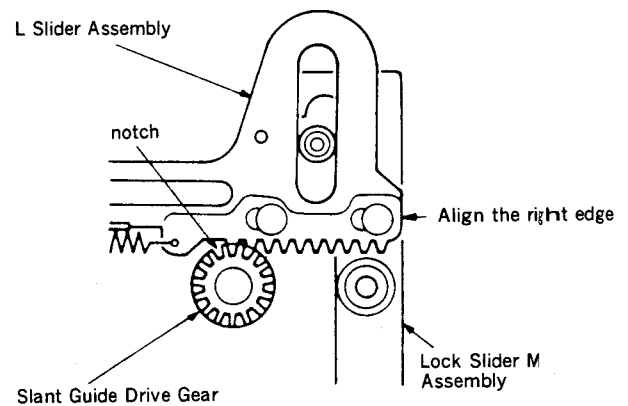


Fig. 2

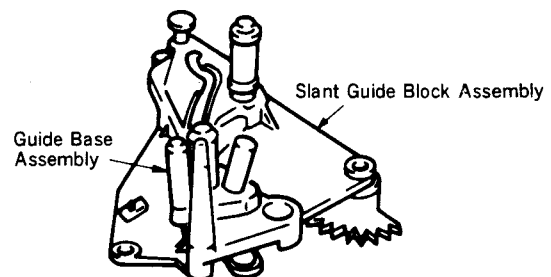


Fig. 3

4-12. REPLACEMENT OF THE No. 5 GUIDE BLOCK COMPLETE ASSEMBLY

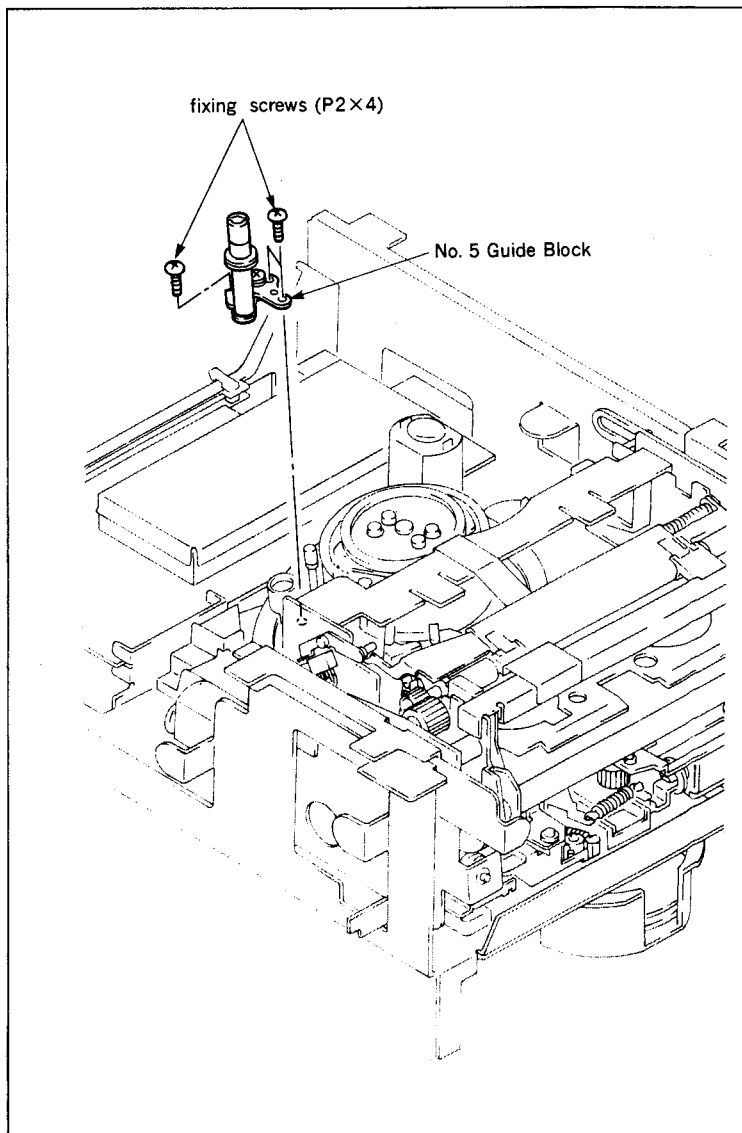
Removal:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) Turn the Rotary Upper Drum counterclockwise and keep heads away from the fixing screw of the Guide Block.
- (3) Remove the three fixing screws and remove the No. 5 Guide Block Complete Assembly.

Installation:

- (1) Replace the No. 5 Guide Block Complete Assembly with a new one.
- (2) Assemble the parts with Removal Steps (1) and (3) in reverse order.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.



4-13. REPLACEMENT OF THE S REEL TABLE ASSEMBLY

Tools: Mode Selector (Ref. No. J-14)
Cassette Tape
Dial Tension Gauge (Ref. No. J-6)
Tension Measurement Reel (30 mm dia.)
(Ref. No. J-7)
Sony Oil

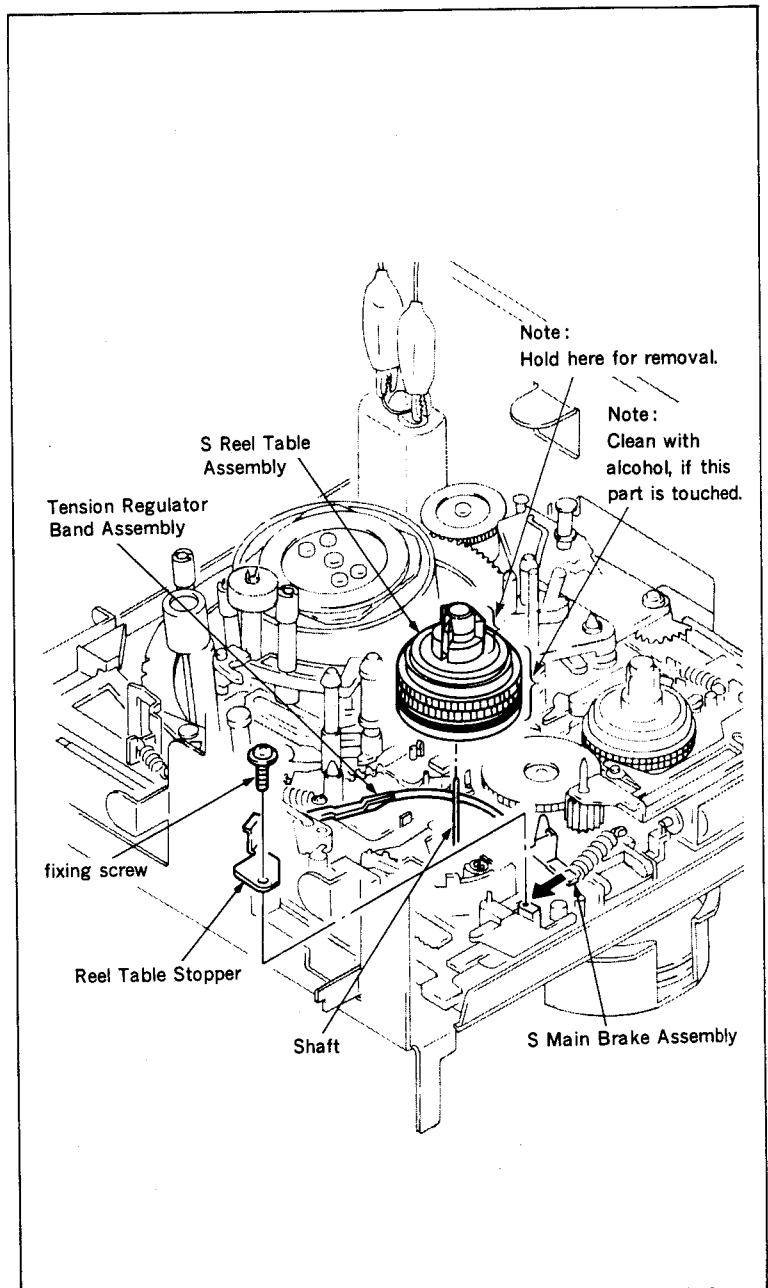
Removal:

- (1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (2) Press the M-mode select button of the Mode Selector and set to the **FF/REW** mode.
- (3) Remove the fixing screw and remove the Reel Table Stopper.
- (4) Remove the S Reel Table Assembly.

Note: Be sure to hold the upper reel claw when removing the S Reel Table. (Note of figure)

Installation:

- (1) Apply a half drop of oil on the top point of the Reel Shaft.
- (2) Move the S Main Brake Assembly in the direction of the arrow.
- (3) Install the new S Reel Table Assembly while being careful not to pinch the Tension Regulator Band Assembly.
- (4) Install the Reel Table Stopper and tighten it with the fixing screw.
- (5) Press the M-mode select button of the Mode Selector and set to the **LOADING/UNLOADING** mode.
- (6) After replacement, perform the FWD running more than two minutes. Then, perform the FWD Back Tension Adjustment referring to Section 5-5.
- (7) Install the Cassette-up Compartment Assembly referring to Section 2-3.



4-14. REPLACEMENT OF THE T REEL TABLE ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
Sony Oil

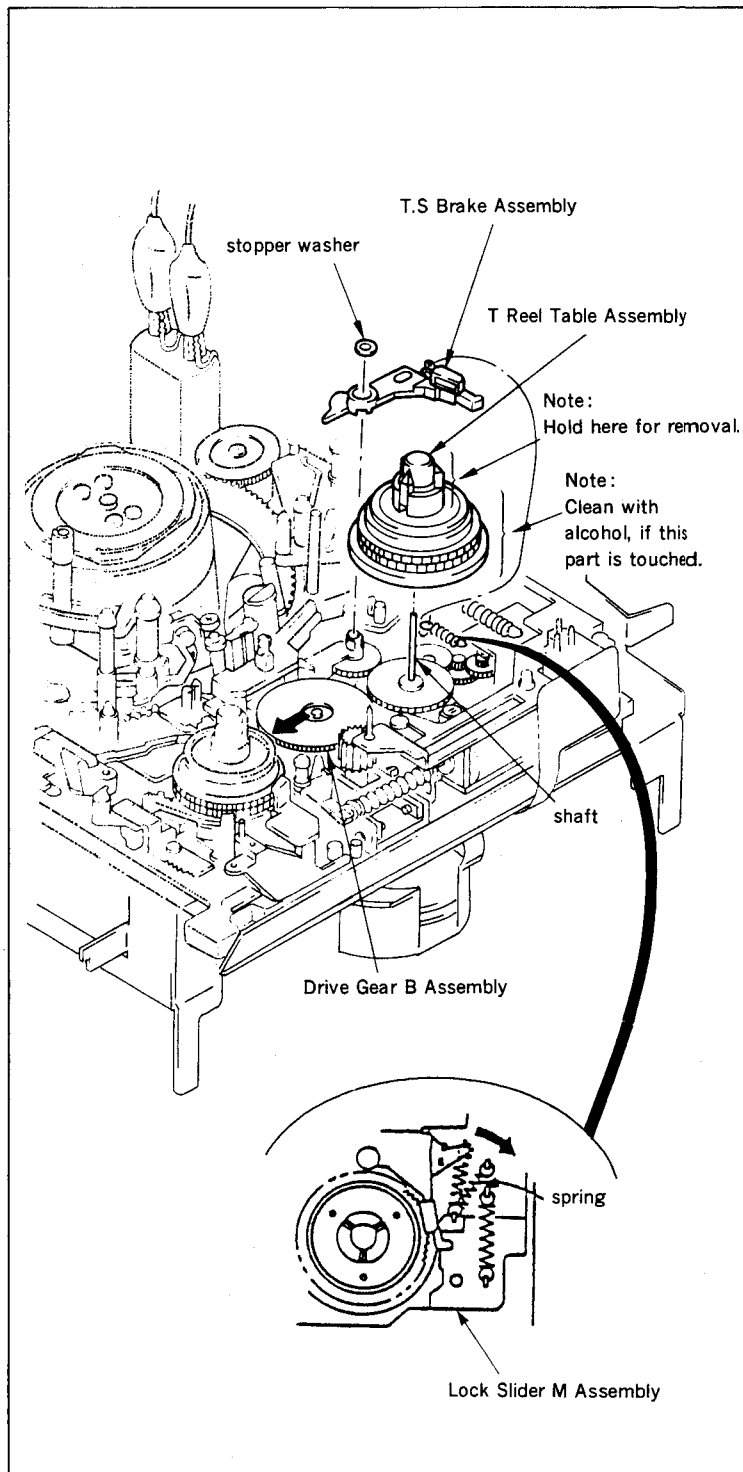
Removal:

- (1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (2) Press the L-mode select button of the Mode Selector and set to the **UNLOADING WAIT** mode.
- (3) Hook the spring which is hooked on the T.S Brake Assembly to the claw of the Lock Slider Assembly.
- (4) Remove the stopper washer and remove the T.S Brake Assembly.
- (5) Press the M-mode select button of the Mode Selector and set to the **EJECT** mode.
- (6) Move the Drive Gear B Assembly in the direction of the arrow.
- (7) Remove the T Reel Table Assembly.

Note: Be sure to hold the upper reel claw when removing the T Reel Table. (Note of figure)

Installation:

- (1) Apply a half drop of oil on the top point of the Reel Shaft.
- (2) Move the Drive Gear B Assembly in the direction of the arrow. (Check that the Mode Selector sets to **EJECT** mode.)
- (3) Replace the T Reel Table Assembly with a new one.
- (4) Assemble the parts with Steps (4) and (5) in reverse order.
- (5) Set the L-mode to **LOADING TOP** mode and set the M-mode to **LOADING/UNLOADING** mode.
- (6) Install the Cassette-up Compartment Assembly referring to Section 2-3.



4-15. REPLACEMENT OF THE PINCH PRESS ARM ASSEMBLY

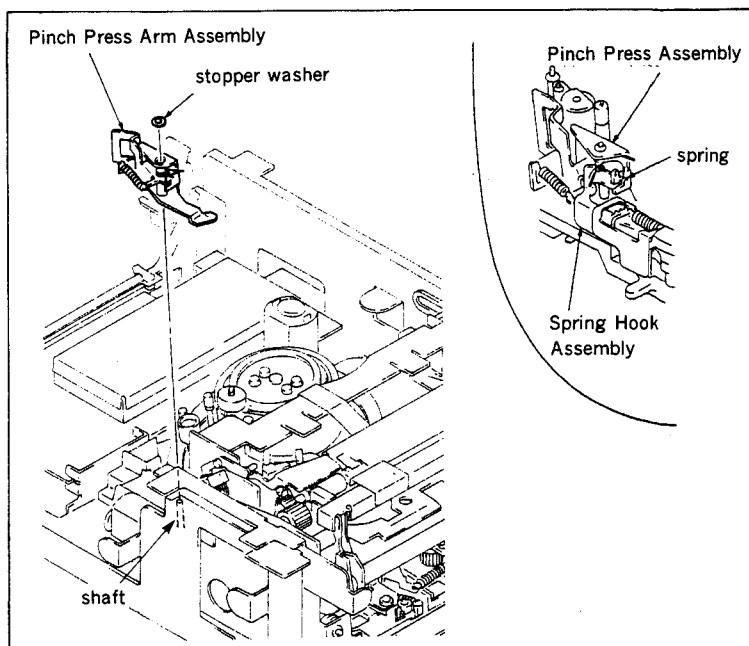
Tool: Sony Oil

Removal:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) Hook the spring which is hooked to the Spring Hook Assembly to the Pinch Press Assembly as shown in the figure.
- (3) Remove the stopper washer and remove the Pinch Press Arm Assembly.

Installation:

- (1) Apply a half drop of oil on the shaft.
- (2) Replace the Pinch Press Arm Assembly with a new one.
- (3) Assemble the parts with Removal Steps (1) to (3) in reverse order.



4-16. REPLACEMENT OF THE TENSION REGULATOR ARM ASSEMBLY

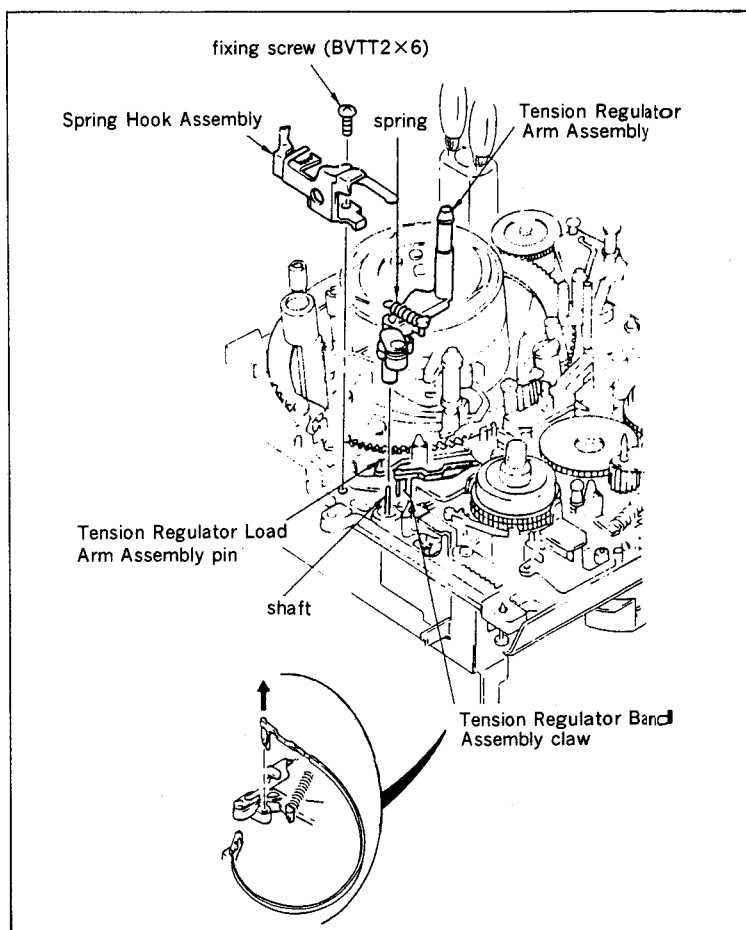
Tools: Mode Selector (Ref. No. J-13)

Sony Oil

Locking Compound

Removal:

- (1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (2) Hook the spring which is hooked to the Spring Hook Assembly to the Pinch Press Arm Assembly.
- (3) Remove the spring which is hooked to the Tension Regulator Spring Hook Assembly.
(Make a note of the hooking position.)
- (4) Remove the fixing screw and remove the Tension Regulator Spring Hook Assembly.
- (5) Press the M-mode select button of the Mode Selector and set to the **FF/REW** mode.
- (6) Remove the claw of the Tension Regulator Band Assembly.
- (7) Remove the Tension Regulator Arm Assembly.



Installation:

- (1) Apply a half drop of oil on the shaft.
- (2) Replace the Tension Regulator Arm Assembly with a new one.
- (3) Install the Tension Regulator Arm Assembly while inserting the pin of the Tension Regulator Load Arm Assembly in the cam groove (on the back of the Arm) of the Tension Regulator Arm Assembly.
- (4) Install the claw of the Tension Regulator Band Assembly.
Note: Do not touch the inside of the band and bend it.
- (5) Press the M-mode select button of the Mode Selector and set to the LOADING/UNLOADING mode.
- (6) Install the Tension Regulator Spring Hook Assembly and tighten it with the fixing screw.
- (7) Smear the Locking Compound to the head of the fixing screw.
- (8) Assemble the Parts with Removal Steps (1) to (3) in reverse order.

Note: After replacement, perform the Tape Path Check referring to Section 6-6.

4-17. REPLACEMENT OF THE TENSION REGULATOR BAND ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)

Cassette Tape

Dial Tension Gauge (Ref. No. J-6)

Tension Measurement Reel (30 mm dia.)
(Ref. No. J-7)

Removal:

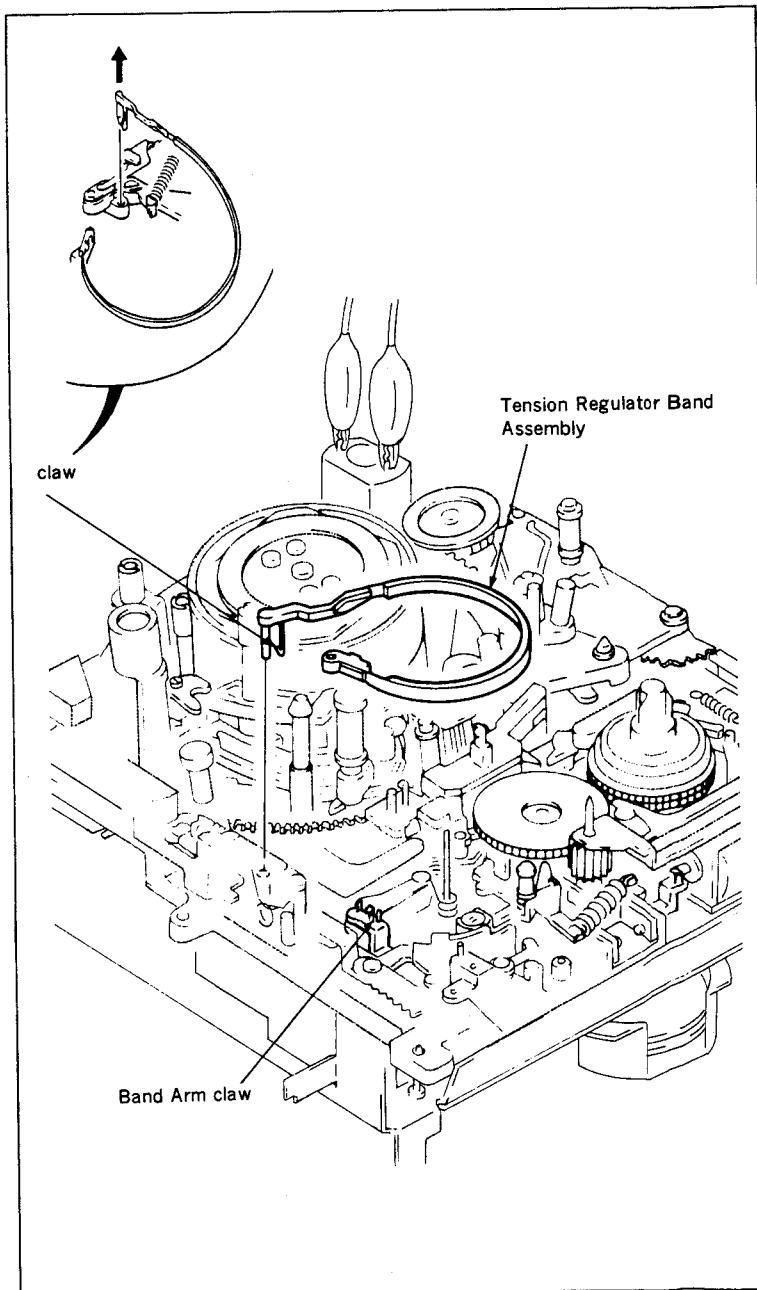
- (1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (2) Remove the S Reel Table Assembly referring to Section 4-13.
- (3) Release the claw of the Band Arm and remove one side of the Tension Regulator Band Assembly.
- (4) Release the claw from the Tension Regulator Arm Assembly and remove the Tension Regulator Band Assembly.

Installation:

- (1) Replace the Tension Regulator Band Assembly with a new one.
- (2) Install the Tension Regulator Band Assembly with Removal Steps (3) and (4) in reverse order.

Note: Do not touch the inside of the band and bend it.

- (3) Install the S Reel Table Assembly referring to Section 4-13.
- (4) After replacement, perform the FWD running more than two minutes and then perform the FWD Back Tension Adjustment referring to Section 5-5.
- (5) Install the Cassette-up Compartment Assembly referring to Section 2-3.



4-18. REPLACEMENT OF THE L SLIDER ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
Sony Grease

Removal:

- (1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (2) Remove the Fly Wheel referring to Section 4-1.
- (3) Remove the Threading Ring Assembly referring to Section 4-4.
- (4) Remove the Entrance Guide (P) Assembly referring to 4-10.
- (5) Remove the Slant Guide Block Assembly referring to Section 4-11.
- (6) Press the L-mode select button of the Mode Selector and set to the **DRUM START** mode.
- (7) Remove the Slant Guide Drive Gear.
- (8) Remove the two stopper washers from the L Slider Assembly.
- (9) While pushing the projection of the RL Arm Assembly in the direction of the arrow, lift the right side of the L Slider Assembly and remove it from the shaft.
- (10) Lift the right side of the L Slider Assembly as shown in figure 2 and remove the pin of the Tension Regulator Load Arm Assembly from the cam groove of the Tension Regulator Arm Assembly, and then remove the L Slider Assembly.
- (11) Remove the stopper washer and remove the Tension Regulator Load Arm Assembly.

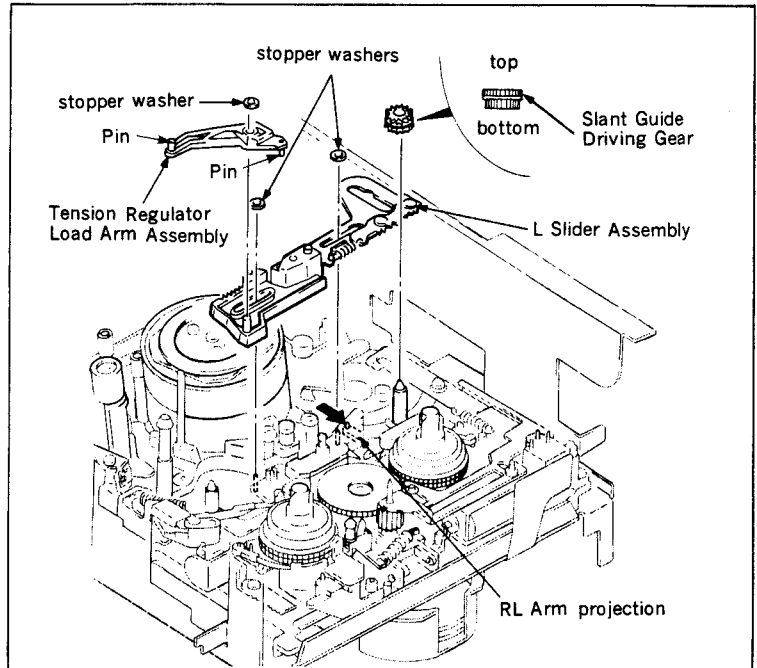


Fig. 1

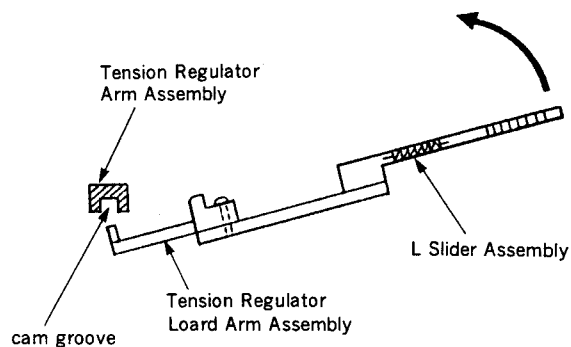


Fig. 2

Installation:

- (1) Replace the L Slider Assembly with a new one and smear Sony Grease to the three longitudinal holes as shown in figure 3.
- (2) Assemble the parts with Removal Steps (8) to (11) in reverse order.

Note: When inserting the pin of the Tension Regulator Load Arm Assembly in the cam groove of the Tension Regulator Arm Assembly, insert the another pin into the groove of the M Slider.

- (3) Press the L-mode select button of the Mode Selector and align the right edges of the L Slider Assembly and the Lock Slider M Assembly. (fig. 4)
- (4) Engage the Slant Guide Drive Gear with L Slider Assembly so that the notch of the Drive Gear is 1 tooth away from the left and gear of the L Slider Assembly as shown in the figure 4.
- (5) Assemble the parts with Removal Steps (1) to (5) in reverse order.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

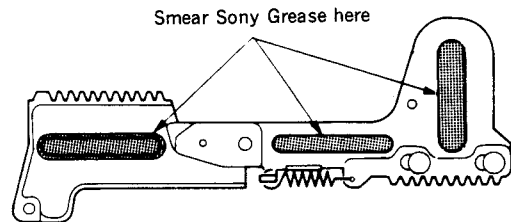


Fig. 3

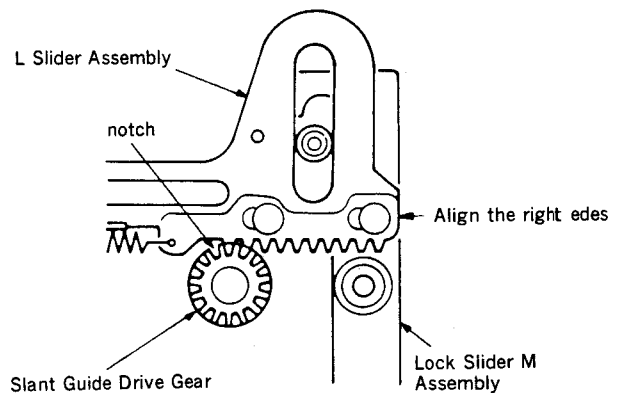


Fig. 4

4-19. REPLACEMENT OF THE L-SWITCH ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)

Sony Oil

Sony Grease

Removal:

- (1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (2) Remove the Fly Wheel referring to Section 4-1.
- (3) Remove the Threading Ring Assembly referring to Section 4-4.
- (4) Remove the Entrance Guide (P) Assembly referring to Section 4-10.
- (5) Remove the Slant Guide Block Assembly referring to Section 4-11.
- (6) Remove the L Slider Assembly referring to Section 4-18.
- (7) Remove the Lock Slider Retainer.
- (8) Remove the tension spring which is hooked to the Lock Slider A.
- (9) Remove the fixing screw and remove the Lock Slider A.
- (10) Remove the stop washer of the Drive Changer Assembly and remove the torsion spring.
- (11) Remove the Drive Changer Assembly.
- (12) Disconnect the connector (6P) on the L-switch Assembly.
- (13) Remove the two fixing screws and remove the L-switch Assembly.

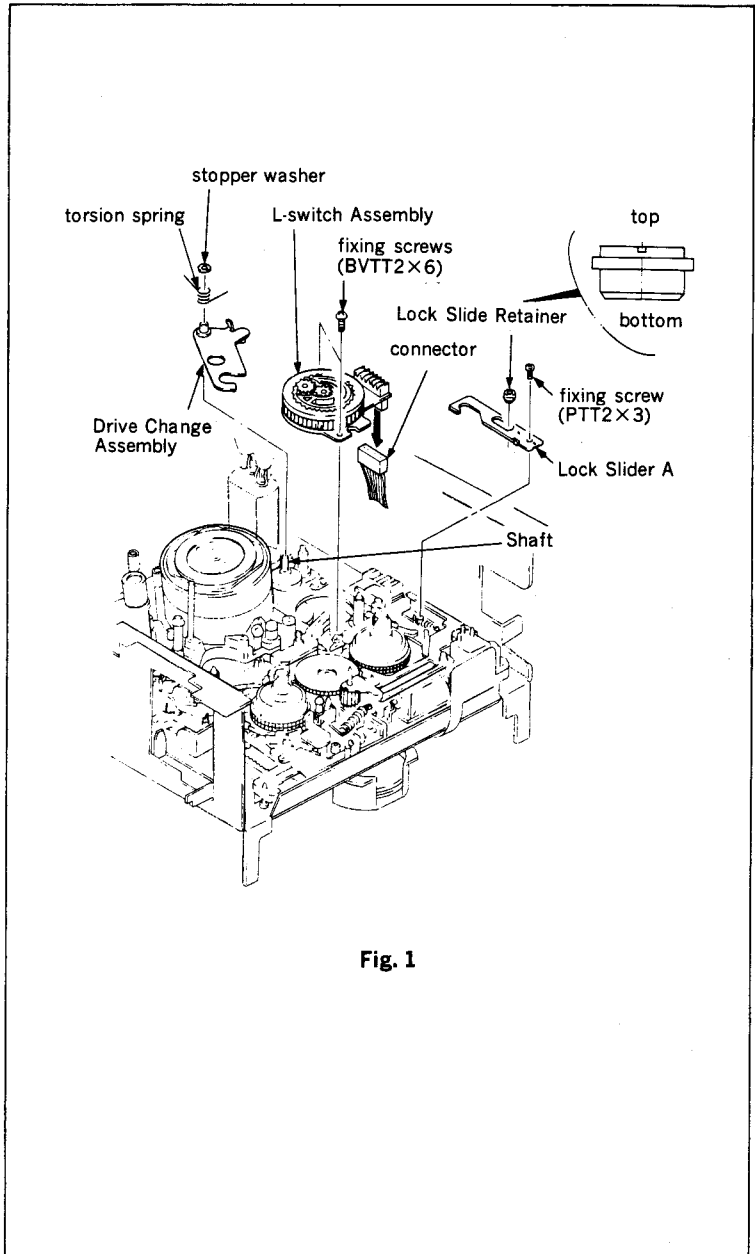


Fig. 1

Installation:

- (1) Replace the L-switch Assembly with a new one and apply a half drop of oil on the Planetary Roller Shaft.
- (2) Assemble the parts with Removal Steps (12) and (13) in reverse order.
- (3) Press the L-mode select button (right or left) of the Mode Selector and check that the L-switch Assembly rotates.
- (4) Apply a half drop of oil on the fixing shaft of the Drive Changer Assembly.
- (5) Smear Sony Grease to the U groove of the Drive Changer Assembly as shown in figure 2.
- (6) Assemble the parts with Removal Steps (10) and (11) in reverse order.
- (7) Press the L-mode select button (right or left) of the Mode Selector and check that the L-switch Assembly rotates.
- (8) Assemble the parts with Removal Steps (7) to (9) in reverse order.
- (9) Press the L-mode select button (right or left) of the Mode Selector so that the Planetary Roller Shaft is placed to the position shown in figure 3.
- (10) Assemble the parts with Removal Steps (1) to (6) in reverse order.

Note: After replacement, perform the Tape Path Adjustment referring to Section 6.

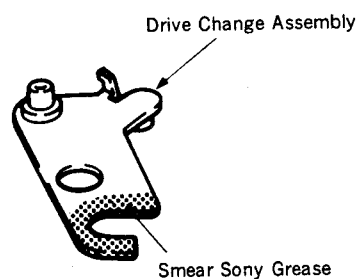


Fig. 2

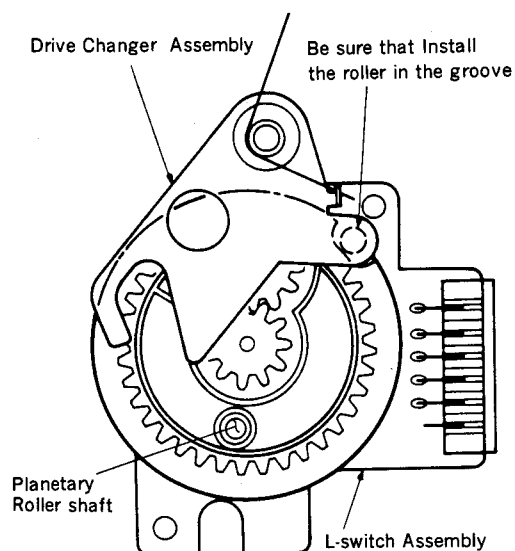


Fig. 3

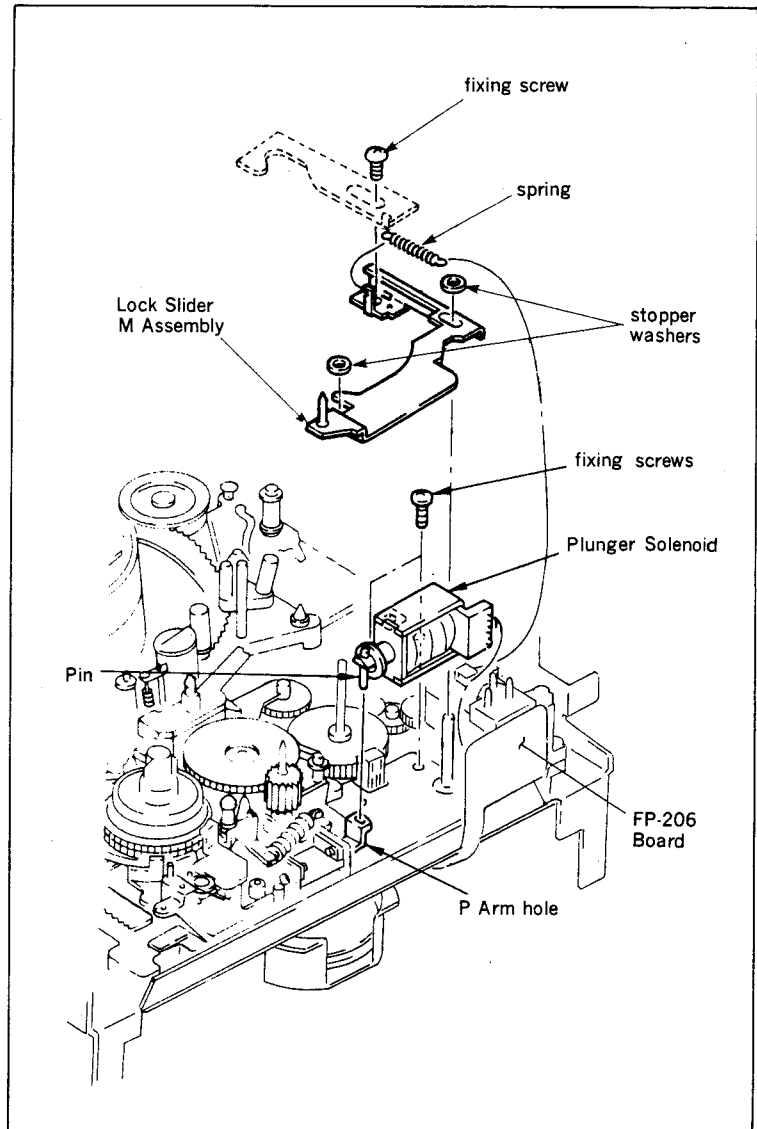
4-20. REPLACEMENT OF THE PLUNGER SOLENOID

Removal:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (3) Remove the spring which is hooked to the Lock Slider M Assembly.
- (4) Remove the two stopper washers.
- (5) Remove the fixing screw and remove the Lock Slider M Assembly.
- (6) Unsolder the three terminals of the Plunger Solenoid of the FP-206 Board.
- (7) Remove the two fixing screws and remove the Plunger Solenoid. (At this time, be careful not to damage the T Reel Assembly with a screwdriver, and do not touch it.)

Installation:

- (1) Replace the Plunger Solenoid with a new one.
- (2) Insert the pin of the Plunger Solenoid into the hole of the P Arm and install the new Plunger Solenoid with the two fixing screws. (At this time, be careful not to damage the T Reel Assembly with a screwdriver and do not touch it.)
- (3) Assemble the parts with Removal Steps (1) to (6) in reverse order.



4-21. REPLACEMENT OF THE M-SWITCH ASSEMBLY

Tools: Mode Selector (Ref. No. J-13)
Sony Oil

Removal:

- (1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (2) Disconnect the connector (CN301) on the RS-31 Board.
- (3) Remove the T Reel Table Assembly referring to Section 4-14.
- (4) Remove the stopper washer and remove the Drive Gear B Assembly.
- (5) Remove the LD-1 Board. (fig. 1)
- (6) Remove the Lock Slider M Assembly referring to Removal Steps (3) to (5) of Section 4-20.
- (7) Remove the tension spring and remove the B Release Arm Assembly.
- (8) Check that the M-mode is put into **EJECT** mode.
- (9) Remove the stopper washer and remove the Mode Output Gear.
- (10) Release the two claws of the Control Motor Cover and remove the Push Switch.
- (11) Disconnect the connector (6P) on the M-switch Assembly.
- (12) Remove the two fixing screws and remove the Control Motor Cover L.
- (13) Remove the fixing screw and while lifting up the M-switch Assembly, push the T.S Release Arm in the direction of the arrow A. Then push the T Main Brake Assembly in the direction of the arrow B and remove the M-switch Assembly.

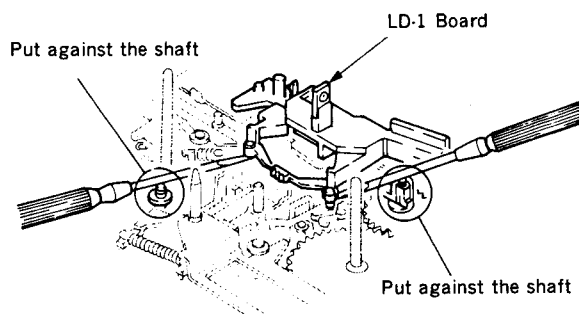


Fig. 1

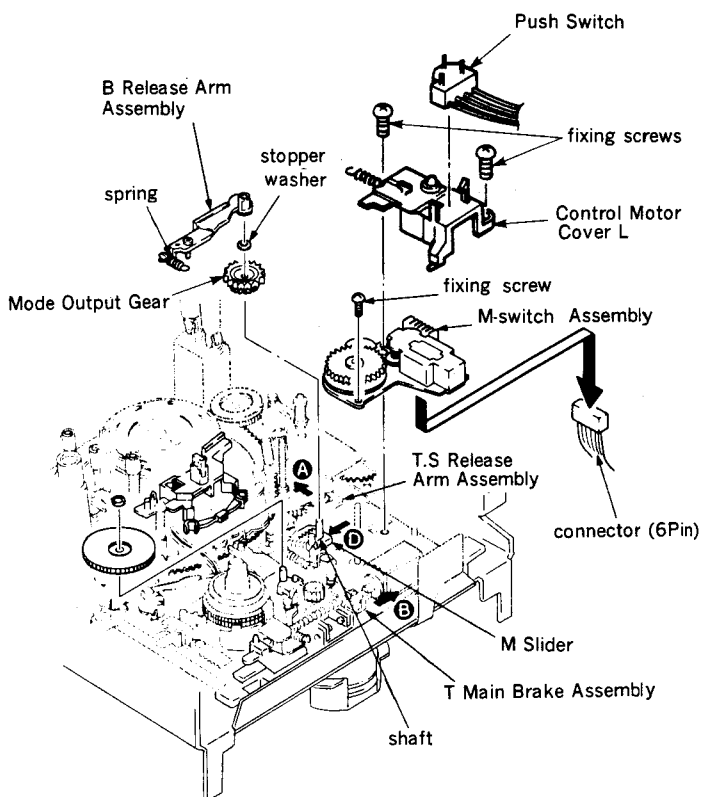


Fig. 2

How to removal the DC Motor:

- (1) Unsolder the two terminals at the C points as shown in figure 3 and remove the DC Motor from the MS-4 Board. (fig. 3)

Installation:

- (1) Replace the M-switch Assembly with a new one.
- (2) Assemble the parts with Removal Steps (10) to (13) in reverse order.
- (3) Check that the mechanical block is put into **EJECT** mode.
- (4) Check that the M Slider moves fully in the direction of arrow D. (fig. 2)
- (5) Apply a half drop of oil on the shaft of the Mode Output Gear. (fig. 2)
- (6) Install the Mode Output Gear so that the center of the M-switch Assembly Gear and the two positioning holes are lined up. (fig. 4)
- (7) Install the stopper washer to the shaft of the Mode Output Gear.
- (8) Press the M-mode select button of the Mode Selector and set to the **LOADING/UNLOADING** mode.
- (9) Assemble the parts with Removal Steps (1) to (7) in reverse order.

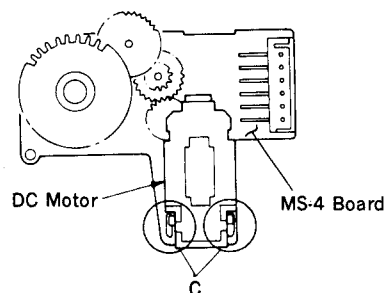


Fig. 3

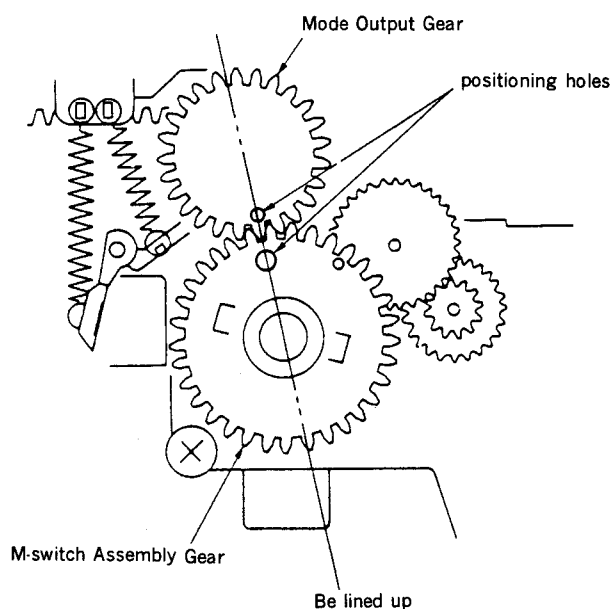


Fig. 4

4-22. REPLACEMENT OF THE M SLIDER

Tools: Mode Selector (Ref. No. J-13)

Sony Oil

Sony Grease

Removal:

- (1) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (2) Remove the Threading Ring Assembly referring to Section 4-4.
- (3) Remove the S Reel Table Assembly referring to Section 4-13.
- (4) Remove the T Reel Table Assembly referring to Section 4-14.
- (5) Remove the Pinch Press Arm Assembly referring to Section 4-15.
- (6) Remove the Tension Regulator Arm Assembly referring to Section 4-16.
- (7) Remove the Tension Regulator Band Assembly referring to Section 4-17.
- (8) Remove the Drive Gear (B) Assembly, LD-1 Board, Lock Slider M Assembly and B Release Arm Assembly referring to Removal Steps (2) to (7) of Section 4-21.
- (9) Remove the Tension Regulator Load Arm Assembly referring to Removal Step (11) of Section 4-18.
- (10) Remove the tension spring which is hooked to the S Main Brake Assembly.
- (11) Remove the two stopper washers and remove the S Main Brake Assembly and T Main Brake Assembly.
- (12) Operate the Mode Selector and set the L-mode to **LOADING TOP** mode and the M-mode to **LOADING/UNLOADING** mode.
- (13) Remove the fixing screw and remove the Drive Complete Assembly.
- (14) Remove the Mode Output Gear referring to Removal Steps (8) and (9) of Section 4-21.
- (15) Remove the two tension springs which are hooked to the REW Brake Assembly and B Release Slider.
- (16) Remove the REW Brake Assembly and remove the REW Brake Spacer.

- (17) Remove the stopper washer and remove the B Release Slider.
- (18) Remove the stopper washer and remove the Ring Lock Spring and RL Arm.
- (19) Move the M Slider to the right. Leave about 5mm space between the fixing shaft and left edge of M Slider's longitudinal hole.
- (20) Remove the E ring and remove the Pinch Press Lever Assembly.
- (21) Remove the tension spring and remove the Hard Brake S.
- (22) Remove the stopper washer and push the Mode Arm in the direction of the arrow. Lift up the left side of the M Slider to remove.

Installation:

- (1) Replace the M Slider with a new one and smear grease. (fig. 2)
- (2) Push the Mode Arm in the direction of the arrow. (fig. 1) While being careful to the positional relationship with other parts install the M Slider. Then install the stopper washer. (fig. 3)
- (3) Install the Hard Brake S and hook the tension spring to it.
- (4) Smear grease to the Pinch Press Lever Assembly. (fig. 4)
- (5) Apply a half drop of oil to the part under the groove of Pinch Press Lever Assembly's shaft.
- (6) Assemble the parts with Removal Steps (16) to (18) and (20) in reverse order.
- (7) Hook the two tension springs to the REW Brake Assembly and B Release Slider.

Note: Hook the two tension springs as follows and be careful not to mix them.

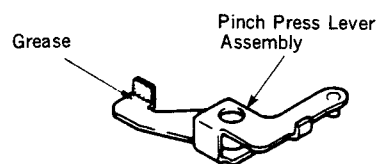
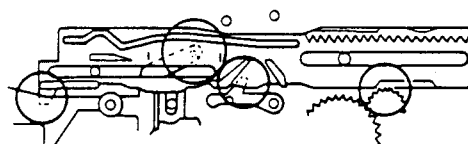
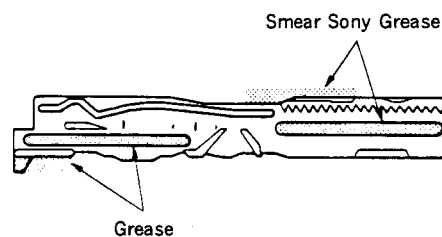
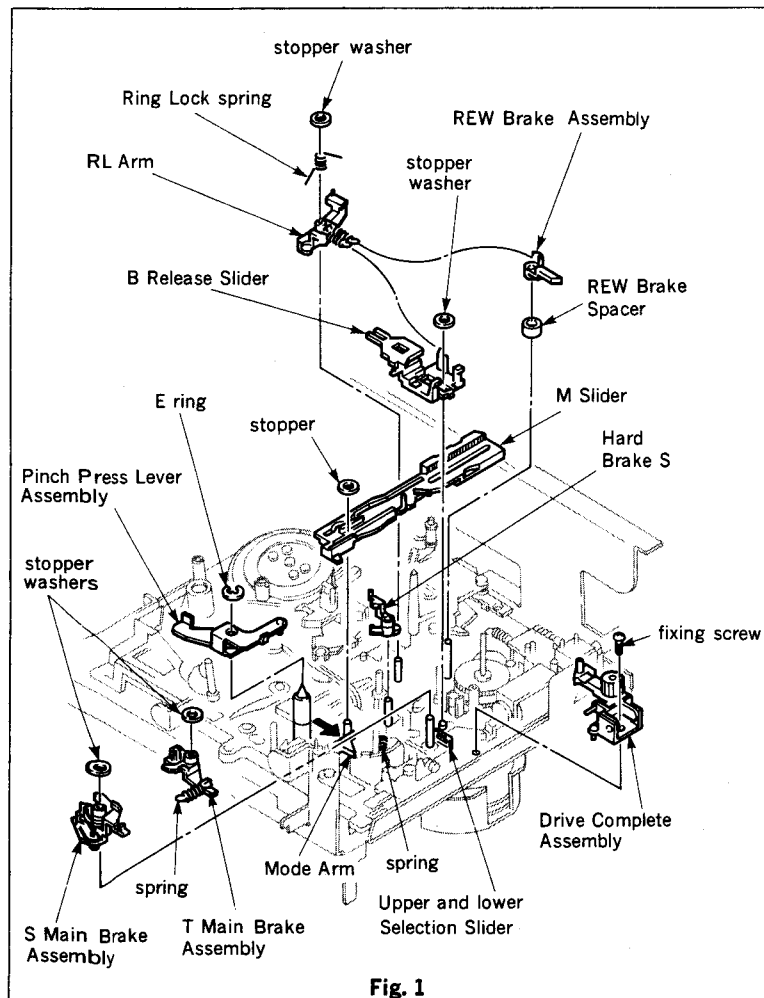
- . B Release Slider Spring:
diameter 2 mm, wire diameter 0.18mm
- . REW Brake Assembly Spring:
diameter 1.6 mm, wire diameter 0.12mm

- (8) Move the M Slider to the left fully.
- (9) Press the M mode select button of the Mode Selector and set to **EJECT** mode.
- (10) Install the Mode Output Gear referring to Installation Steps (5) to (7) in Section 4-21.
- (11) Press the M mode select button of the Mode Selector and set to the **LOADING/UNLOADING** mode.

- (12) Insert the horizontal shaft of the Drive Complete Assembly into the groove of the Upper and Lower Selection Arm and tighten the fixing screw.

- (13) Assemble the parts with Removal Steps (1) to (11) in reverse order.

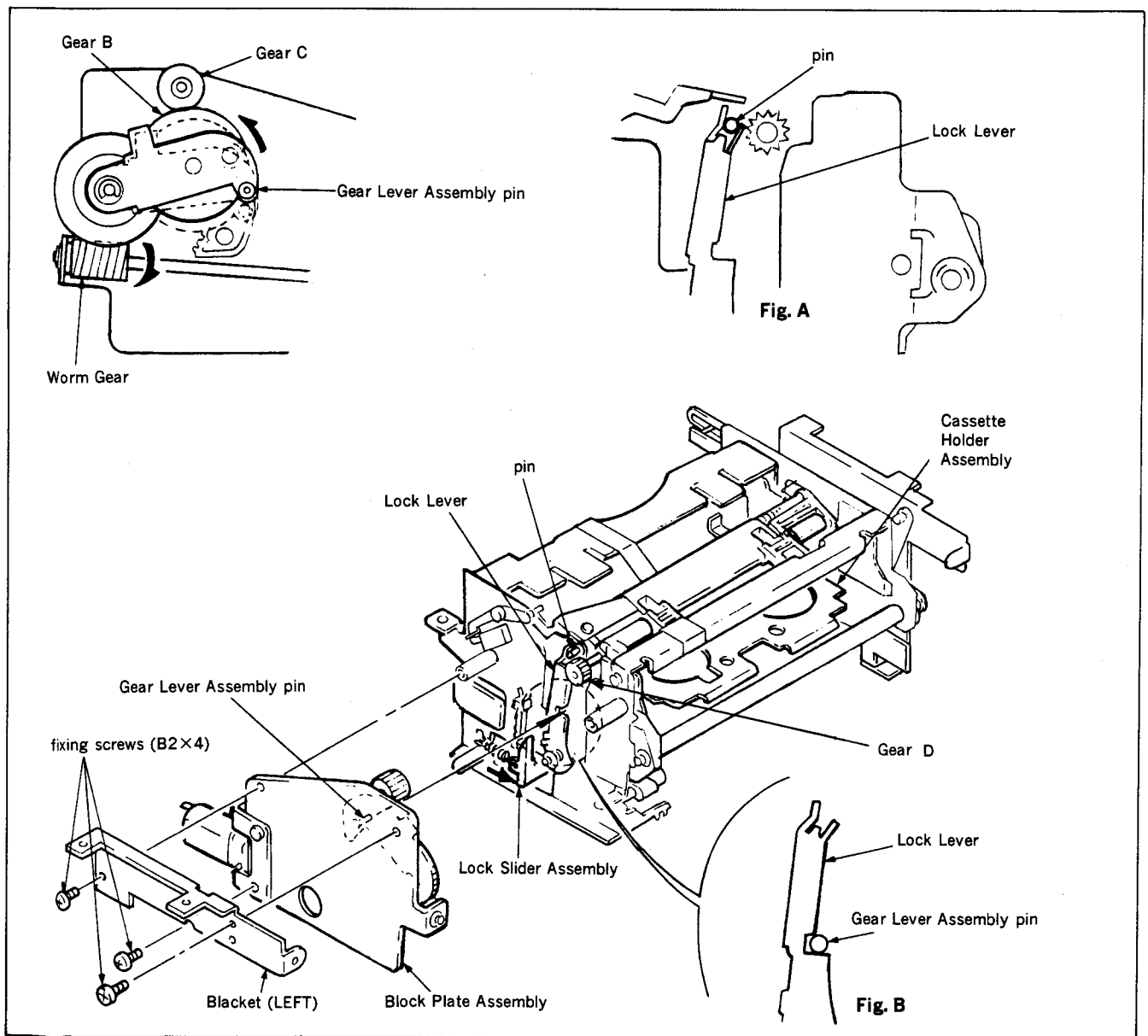
Note: After replacement, perform the Tape Path Check referring to Section 6-6.



4-23. INSTALLATION OF THE BLOCK PLATE ASSEMBLY

When removing the Block Plate Assembly, installing procedures are as follows:

- (1) Push the Lock Slider Assembly in the direction of the arrow and lift the Cassette Holder.
- (2) Check that the positional relationship between the Lock Lever and pin is as shown in figure A.
- (3) Turn the Worm Gear in the direction of the arrow and engage the Gear B and Gear C.
- (4) While checking that positional relationship between the pin of the Gear Lever Assembly and Lock Lever is as shown in figure B, fix the Block Plate Assembly and Blacket (LEFT) with three fixing screws.
- (5) Check that the Gear C and D are engaged.

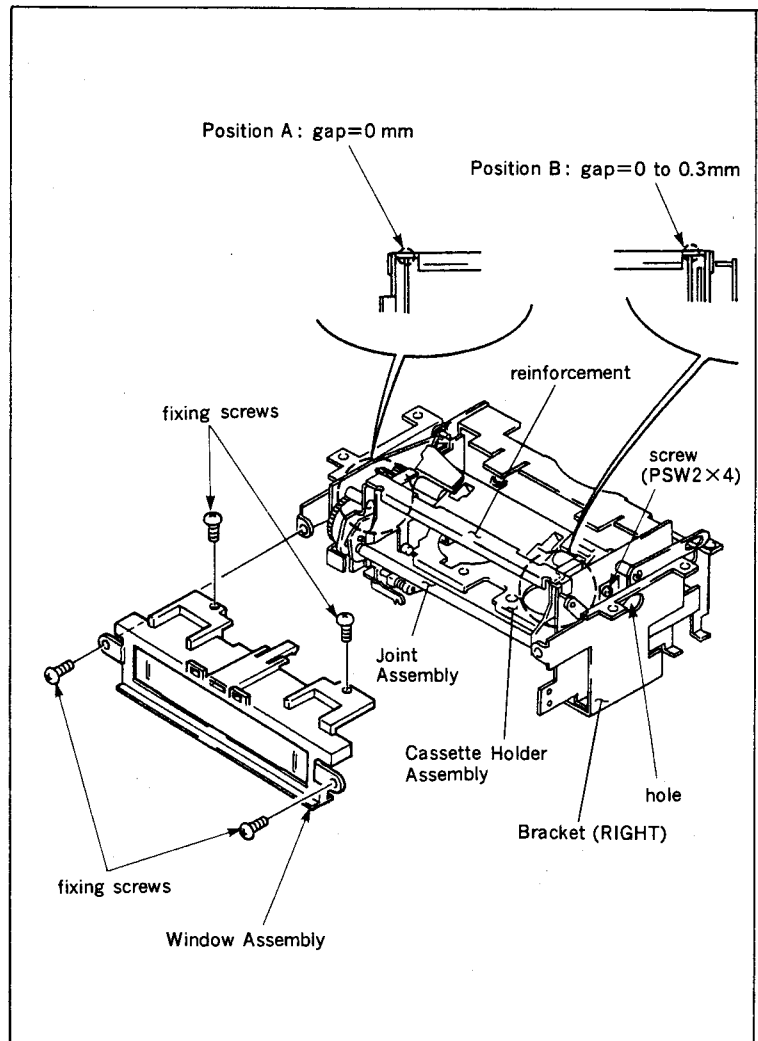


4-24. PARALLELISM ADJUSTMENT OF THE CASSETTE HOLDER BLOCK

When the following trouble happen, perform this adjustment. When inserting or ejecting the cassette, it is caught in the Cassette Holder Assembly or Joint Assembly, etc., and does not move smoothly.

Adjustment procedure:

- (1) Open the MB-19 Board referring to Section 2-5-5.
- (2) Remove the Cassette-up Compartment Assembly referring to Section 2-3.
- (3) Remove the four fixing screws and remove the Window Assembly.
- (4) Loosen the screw (PSW2 X 4) from the hole of the Braket (RIGHT).
- (5) Push the bottom of the Cassette Holder Assembly against the reinforcement, and adjust the position so that there is no clearance at points A and B.
- (6) Tighten the screw (PSW2 X 4) and smear locking compound to it.
- (7) Assemble the parts with Steps (1) to (3) in reverse order.



SECTION 5

TORQUE AND BACK TENSION ADJUSTMENT

After removing the Mechanical Deck and Cassette-up Compartment from the unit referring to Section 2-2 and 2-3, perform these adjustments except for Section 5-4.

5-1. CHECK OF THE MAIN BRAKE TORQUE

5-1-1. S Main Brake Torque

Tools: Mode Selector (Ref. No. J-13)

Tension Measurement Reel

(Ref. No. J-8)

Dial Tension Gauge (Ref. No. J-6)

Mode: Press the M-mode select button of the Mode Selector and set to the **FF/REW** mode.

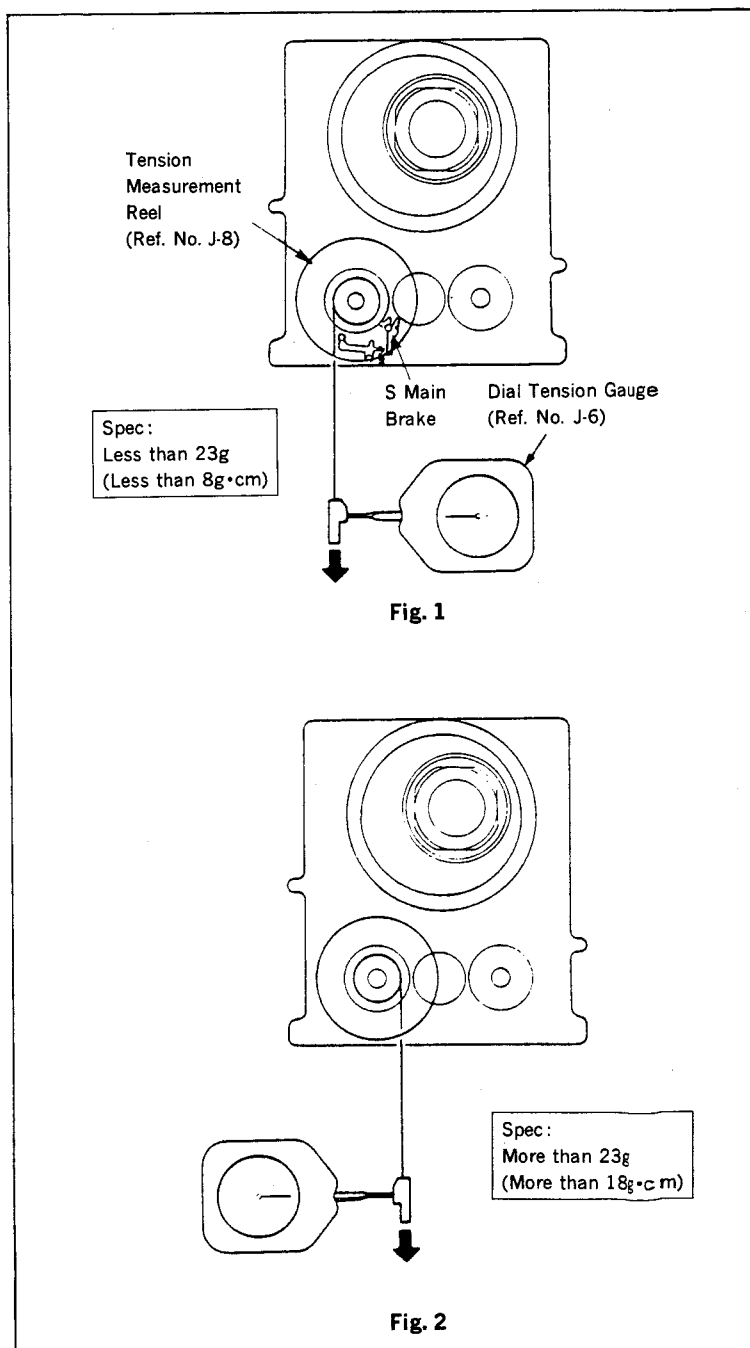
Check Procedure:

- (1) Set the Tension Measurement Reel on the S Reel Table and put the Dial Tension Gauge at the end of the string.
- (2) Pull out the Dial Tension Gauge in the direction of the arrows and check that those readings meet the required specifications as shown in figure 1 and 2.

Note: Both S Main Brake and S Soft Brake work in the **FF/REW** mode.

Adjustment Procedure:

- (1) If the reading do not meet the required specification, replace the S Main Brake or S Reel Table Assembly.



5-1-2. T Main Brake Torque

Tools: Mode Selector (Ref. No. J-13)

Tension Measurement Reel

(Ref. No. J-8)

Dial Tension Gauge (Ref. No. J-6)

Mode: Press the M-mode select button of the Mode Selector and set to the **FF/REW** mode.

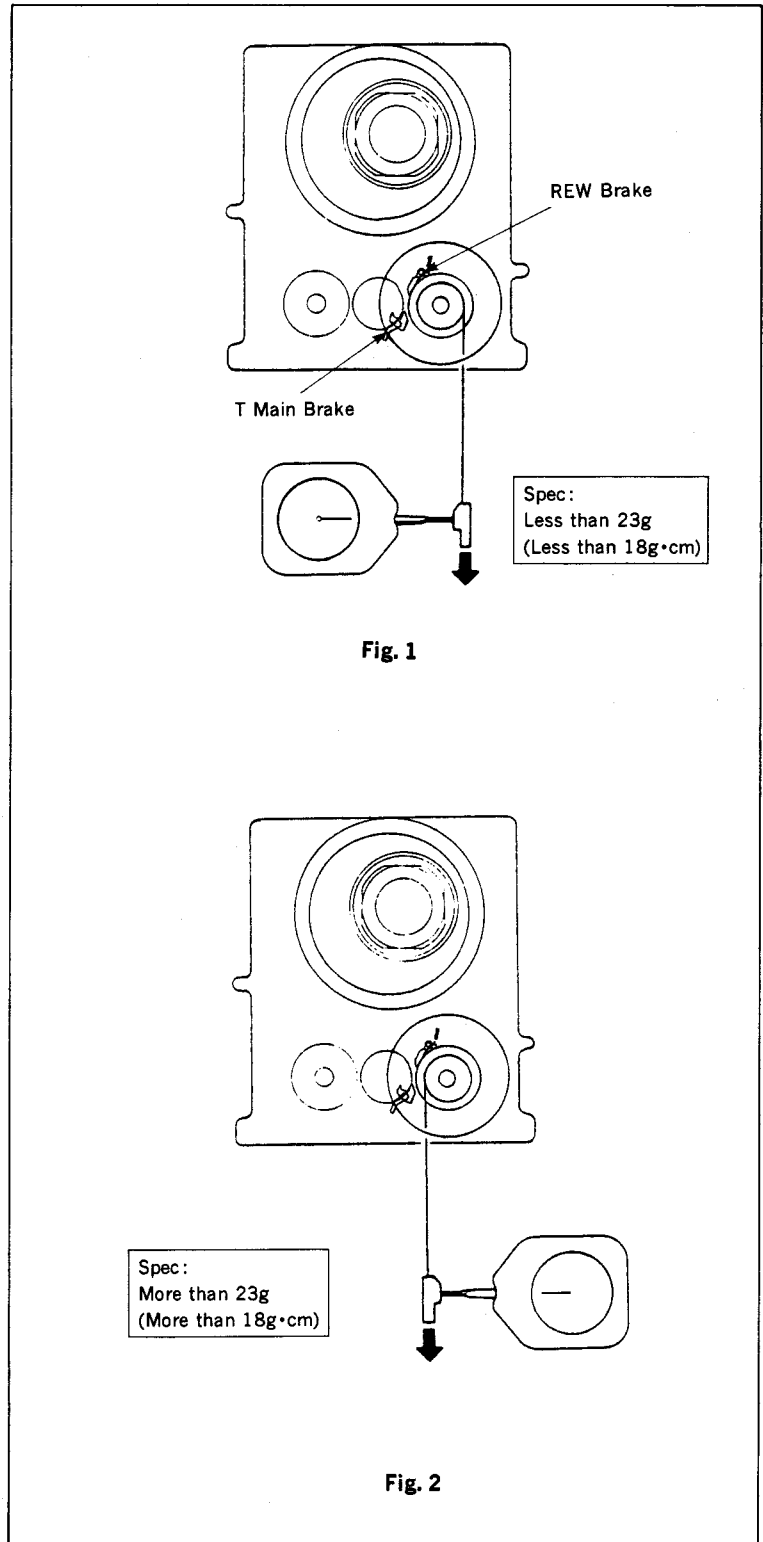
Check Procedure:

- (1) Set the Tension Measurement Reel on the T Reel Table and put the Dial Tension Gauge at the end of the string.
- (2) Pull out the Dial Tension Gauge in the direction of the arrows and check that these readings meet the required specifications as shown in figure 1 and 2.

Note: Both T Main Brake and REW Brake work in the **FF/REW** mode.

Adjustment Procedure:

- (1) If the reading do not meet the required specification, replace T Main Brake or T Reel Table.



5-2. CHECK OF THE SOFT BRAKE TORQUE

5-2-1. S Side Soft Brake Torque

Tools: Mode Selector (Ref. No. J-13)
Tension Measurement Reel
(Ref. No. J-8)
Dial Tension Gauge (Ref. No. J-6)

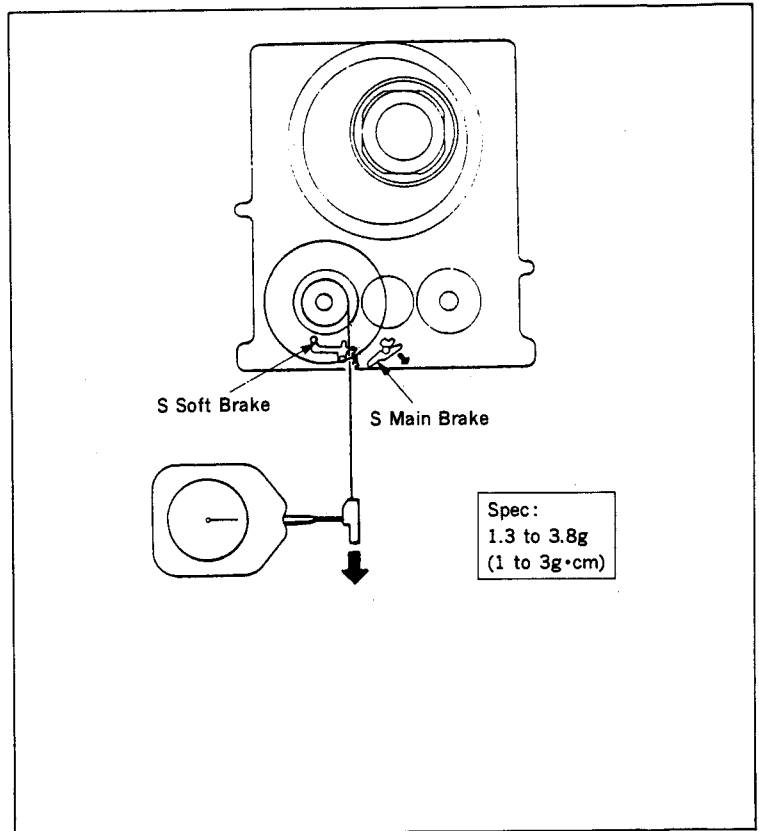
Mode: Press the M-mode select button of the Mode Selector and set to the **FF/REW** mode.

Check Procedure:

- (1) Set the Tension Measurement Reel on the S Reel Table and put the Dial Tension Gauge at the end of the string.
- (2) Release the S Main Brake by hand.
- (3) While releasing the S Main Brake, pull out the Dial Tension Gauge in the direction of the arrow. Check that this reading meets the required specification.

Adjustment Procedure:

- (1) Adjust the strength of S Soft Brake Spring by stretching or cutting.



5-2-2. T Side Soft Brake Torque

Tools: Mode Selector (Ref. No. J-13)

Tension Measurement Reel

(Ref. No. J-8)

Dial Tension Gauge (Ref. No. J-6)

Mode: Press the M-mode button of the Mode Selector and set to the **RVS** mode.

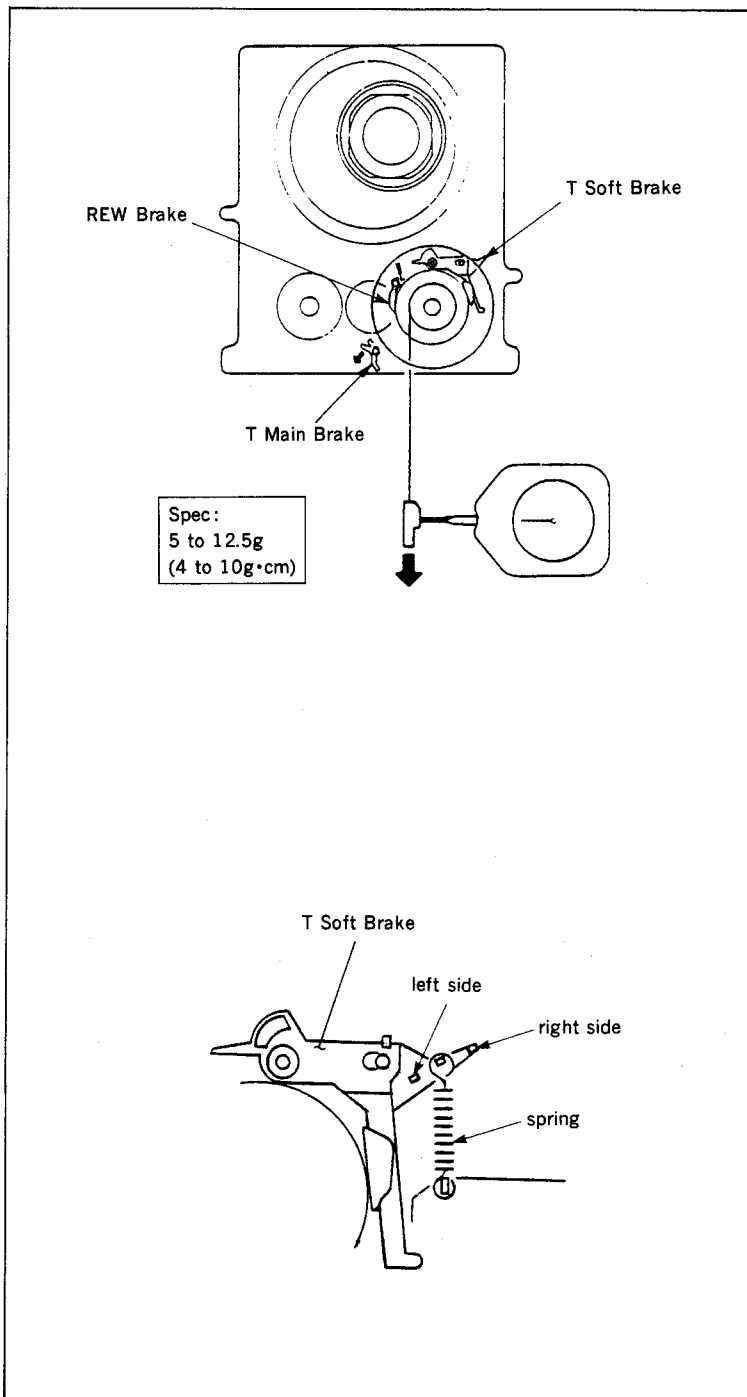
Check Procedure:

- (1) Set the Tension Measurement Reel on the T Reel Table and put the Dial Tension Gauge at the end of the string.
- (2) Release the T Main Brake by hand.
- (3) While releasing the S Main Brake, pull out the Dial Tension Gauge in the direction of the arrow. Check that this reading meets the required specification.

Note: Both T Soft Brake and REW Brake work in the RVS mode.

Adjustment Procedure:

- (1) Change the position of the tension spring which is hooked to the T Soft Brake.
 - . more than the spec. : Hook the left side.
 - . less than the spec. : Hook the right side.
- (2) If the reading do not meet the required specification with Step (1), replace the T Soft Brake or REW Brake, or both of them.



5-3. CHECK OF THE REW BRAKE TORQUE

Tools: Mode Selector (Ref. No. J-13)

Tension Measurement Reel

(Ref. No. J-8)

Dial Tension Gauge (Ref. No. J-6)

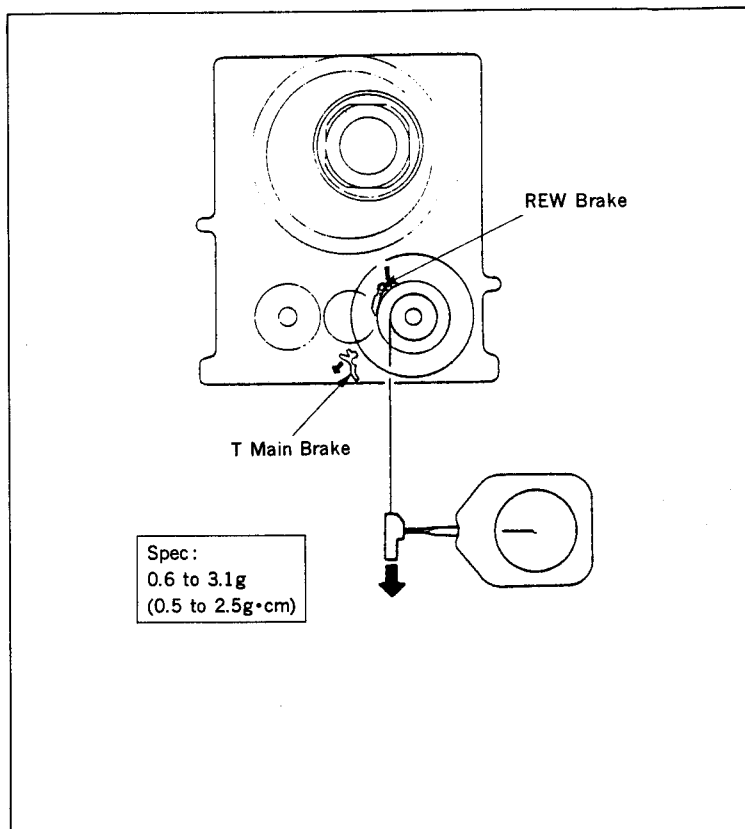
Mode: Press the M-mode select button of the Mode Selector and set to the **FF/REW** mode.

Check procedure:

- (1) Set the Tension Measurement Reel on the T Reel Table and put the Dial Tension Gauge at the end of the string.
- (2) Release the T Main Brake by hand.
- (3) While the releasing the T Main Brake, pull out the Dial Tension Gauge in the direction of the arrow. Check that this reading meet the required specification.

Adjustment Procedure:

- (1) Adjust the strength of the tension spring by stretching or cutting, or replace the REW Brake with a new one.



5-4. CHECK BY THE FWD, RVS TAKE-UP TORQUE CASSETTE

Tool: FWD, RVS take-up torque cassette

(Ref. No. J-12)

Mode: PLAY mode

Check Procedure:

- (1) Insert the FWD, RVS take-up torque cassette in the unit.
- (2) Put the unit into the PLAY mode, check that the torque reading of the T Reel Table meets the required specification.
Spec. : 9.5 to 15.5 g.cm
- (3) Put the unit into the PLAY mode and press the REW button. Immediately check that the torque reading of the S Reel Table meets the required specification.
Spec. : 17 to 23 g.cm

Adjustment procedure:

- (1) If the readings do not meet the required specifications, replace each Reel Table Assembly.

5-5. FWD BACK TENSION ADJUSTMENT

Tools: Mode Selector (Ref. No. J-13)

Tension Measurement Reel

(Ref. No. J-7)

Dial Tension Gauge (Ref. No. J-6)

Mode: Press the L-mode select button of the Mode Selector and set to the **LOADING END**. Press the M-mode select button and set to the **FWD** mode.

Check Procedure:

- (1) Remove the Cassette-up Compartment referring to Section 2-3.
- (2) Press the L-mode select button of the Mode Selector and set to the **LOADING END** mode. Press the M-mode select button and set to the **FWD** mode.
- (3) Loosen the fixing screw and move the Band Adjustment Plate in the direction of the arrow A. Check the possible movement range θ of the No. 1 Guide.
- (4) Tighten the fixing screw where the No. 1 Guide Cap is positioned at one-third of θ .
- (5) Set the Tension Measurement Reel on the S Reel Table and trail the tape along the No. 1 Guide, No. 2 Guide, No. 3 Guide, IP Roller Guide and Drum.
- (6) Put the Dial Tension Gauge at the end of the tape. Pull out the Dial Tension Gauge at a contact speed approx. 15cm/sec. in the direction of the arrow B. At this time, check that this reading meets the required specification.

Spec. : 12 to 14 g

Adjustment Procedure:

- (1) If the reading do not meet the required specification, change the position of the tension spring which is hooked to the Tension Regulator Spring Hook Assembly.
 - . more than the Spec. :
the direction of the arrow C
 - . less than the Spec. :
the direction of the arrow D

NOTE:

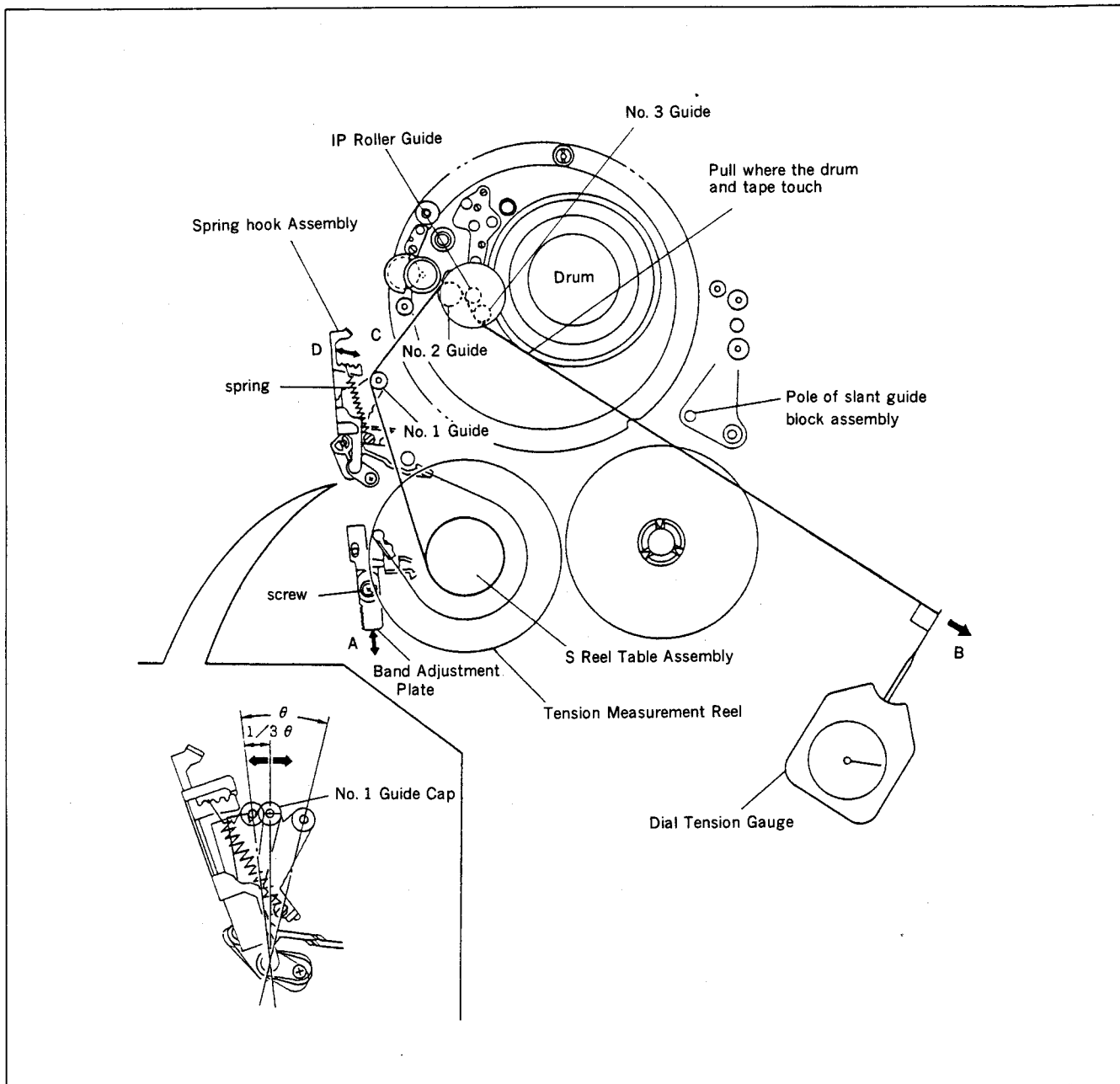
When replacing the parts as follows, perform the FWD Back Tension Adjustment.

- . Tension Regulator Band Assembly
- . S Reel Table Assembly
- . Entrance Guide (P) Assembly

When replacing these parts, perform the free running in the FWD mode for two minutes and then adjust the FWD Back Tension.

Adjustment Procedure:

- (1) Install the Cassette-up Compartment Assembly with Removal Steps Section 2-3 in reverse order.
- (2) Install the Mechanical Deck with Removal Steps Section 2-2 in reverse order.
- (3) Insert the cassette tape in the unit and perform the FWD running for two minutes.
- (4) Eject the cassette tape.
- (5) Remove the Mechanical Deck from the unit referring to Section 2-2.
- (6) Perform the FWD Back Tension Adjustment referring to Section 5-5.





SECTION 6 TAPE PATH ADJUSTMENT

After check that the Electrical Adjustments (Sections 7 to 10) are completed, perform this adjustment.

Alignment Information

Track Shift Tool

The 8 mm Video System employs a high precision tracking ATF (Auto Track Finding) system which instantaneously controls the tape running speed with four kinds of pilot signals. In this way, the Tracking Adjustment Knob is unnecessary and it is possible to trace with accuracy. On the other hand, the adjustment of the Tape Path System was difficult in the ATF system. It was impossible to adjust perfectly because the ATF system automatically corrected even it small miss-tracking occurs. Then the Track Shift Tool (Ref. No. J-14) is used in the adjustment of Tape Path System. The Track Shift Tool can forcibly release the ATF system and can easily adjust the Tape Path System by setting the tracking amount (track shift) manually.

6-1. CONNECTION OF THE TRACK SHIFT TOOL

Use the connection cords (Ref. No. J-15 and J-16) for connection. Connect the Track Shift Tool and the unit as shown in figure 1.

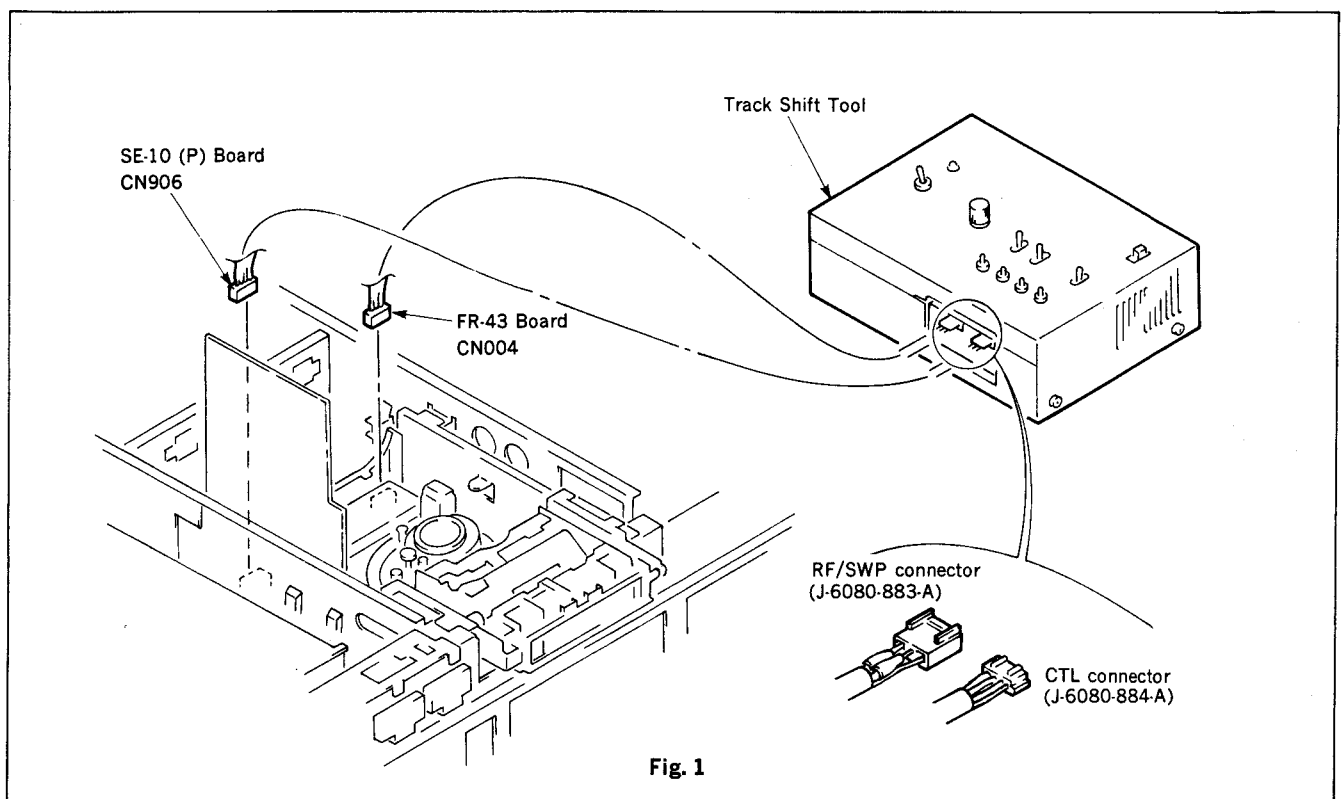
. RF/SWP connector ...

to CN004 on the FR-43 Board

. CTL connector ...

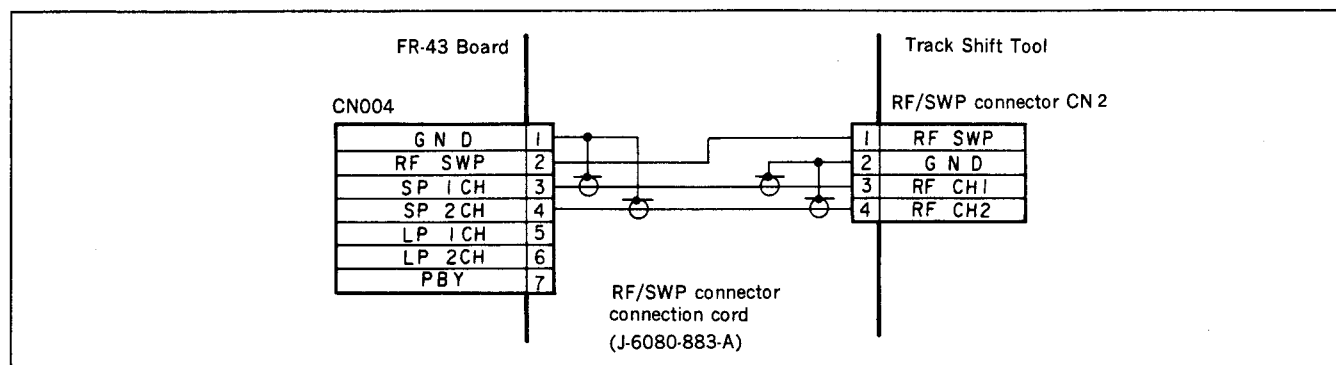
to CN906 on the SE-10(P) Board

(Please refer to operation manual of the Track Shift Tool for details.)

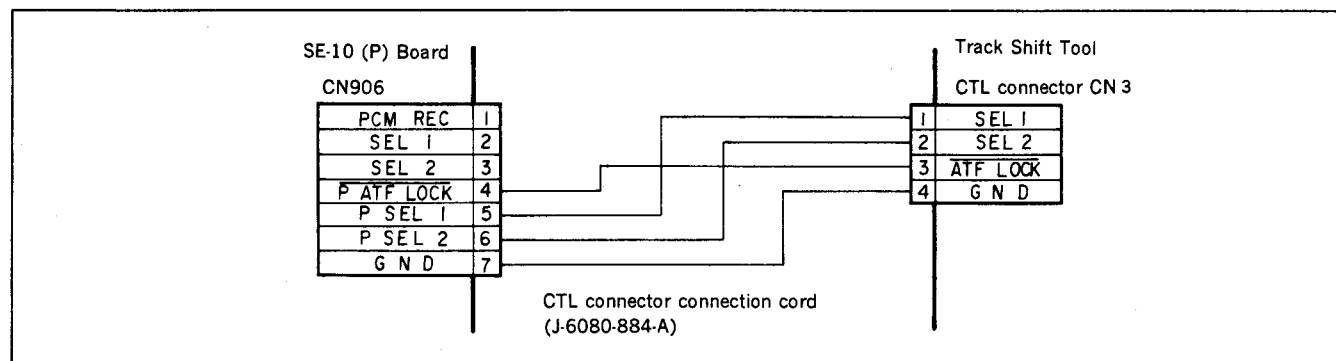


[Designated Connecting Cord]

- . RF/SWP connector connection cord
(Part No. J-6080-883-A)



- . CTL connector connection cord
(Part No. J-6080-884-A)



[Setting of the Switches]

SEL switch

When performing the track shift, set the switch to ON. When setting to OFF, the unit side controls.

PATTERN switch

Set to EV side.

ATF ADJ

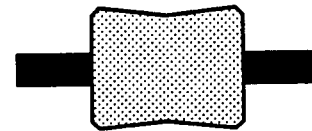
Set to OFF side.

When adjusting EVO-9800P, the other switches are not used.

6-2. PREPARATION FOR ADJUSTMENT

Tools: Track Shift Tool (Ref. No. J-14)
 RF/SWP connector (Ref. No. J-15)
 CTL connector (Ref. No. J-16)
 Oscilloscope
 Alignment tape for tracking
 (WR5-1CP) (Ref. No. J-5)

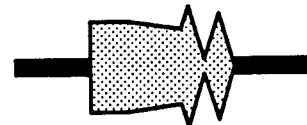
- (1) Clean the tape path surface (the individual tape guides, drum, capstan shaft and pinch roller).
- (2) Connection of the oscilloscope
 1CH:CH2 checking pin of the Track Shift Tool
 EXT TRIG:RF SWP checking pin of the Track Shift Tool
- (3) 1. Set the SEL switch of the Track Shift Tool to OFF and play back the alignment tape for tracking (WR5-1CP). Check that the RF waveforms of both entrance and exit sides are flat. (fig. 1 (a))
2. Set the SEL switch of the Track Shift Tool to ON and check that the RF waveform of the exit side is as shown in the fig. 1 (d).
- . In case of the RF waveform at the entrance side is not flat. (fig. 1 (b))
- ... Perform Tape Entrance Side Adjustment referring to Section 6-4.
- . In case of the RF waveform at the exit side do not meet the steps 1 and 2.
- ... Perform Tape Exit Side Adjustment referring to Section 6-5.



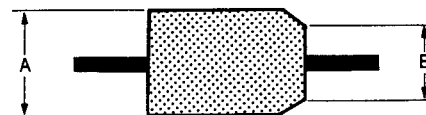
(a) Normal



(b) Entrance side is defective.



(c) Exit side is defective.



$$\frac{5}{6}A \geq B \geq \frac{3}{4}A$$

(d)

Fig. 1

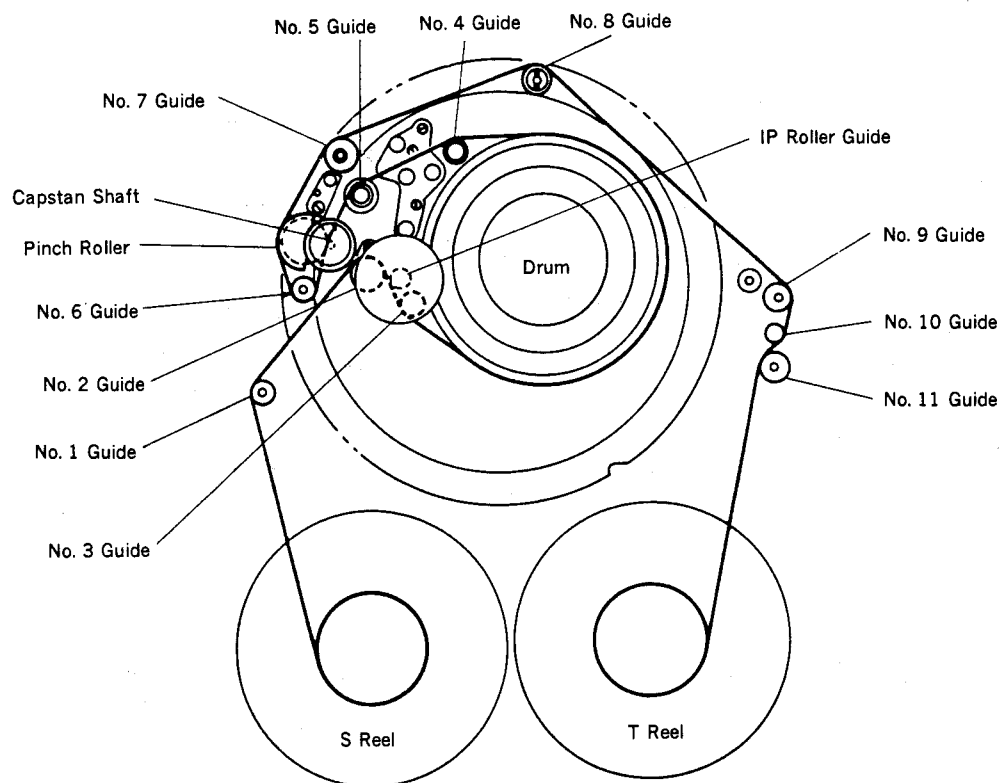
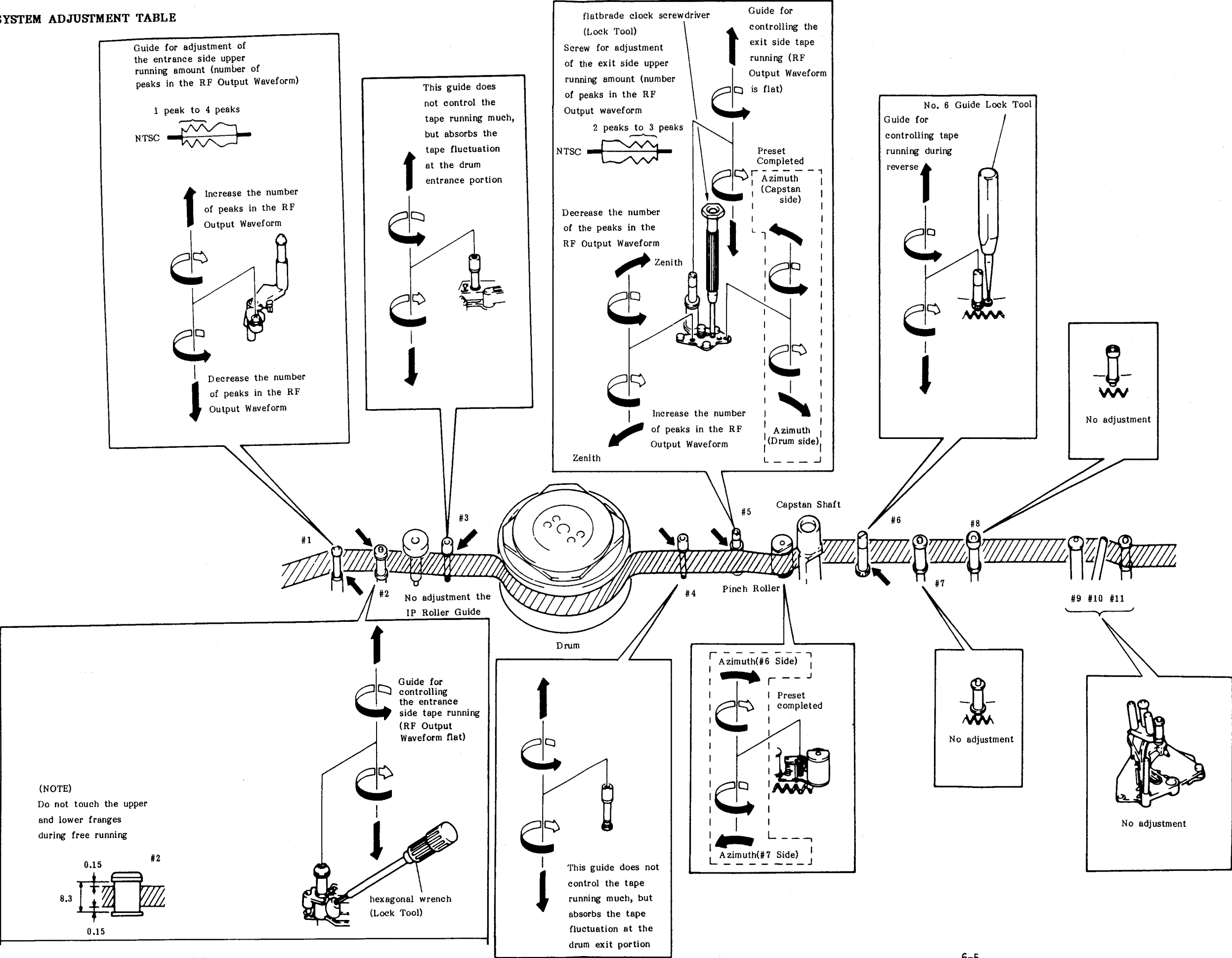
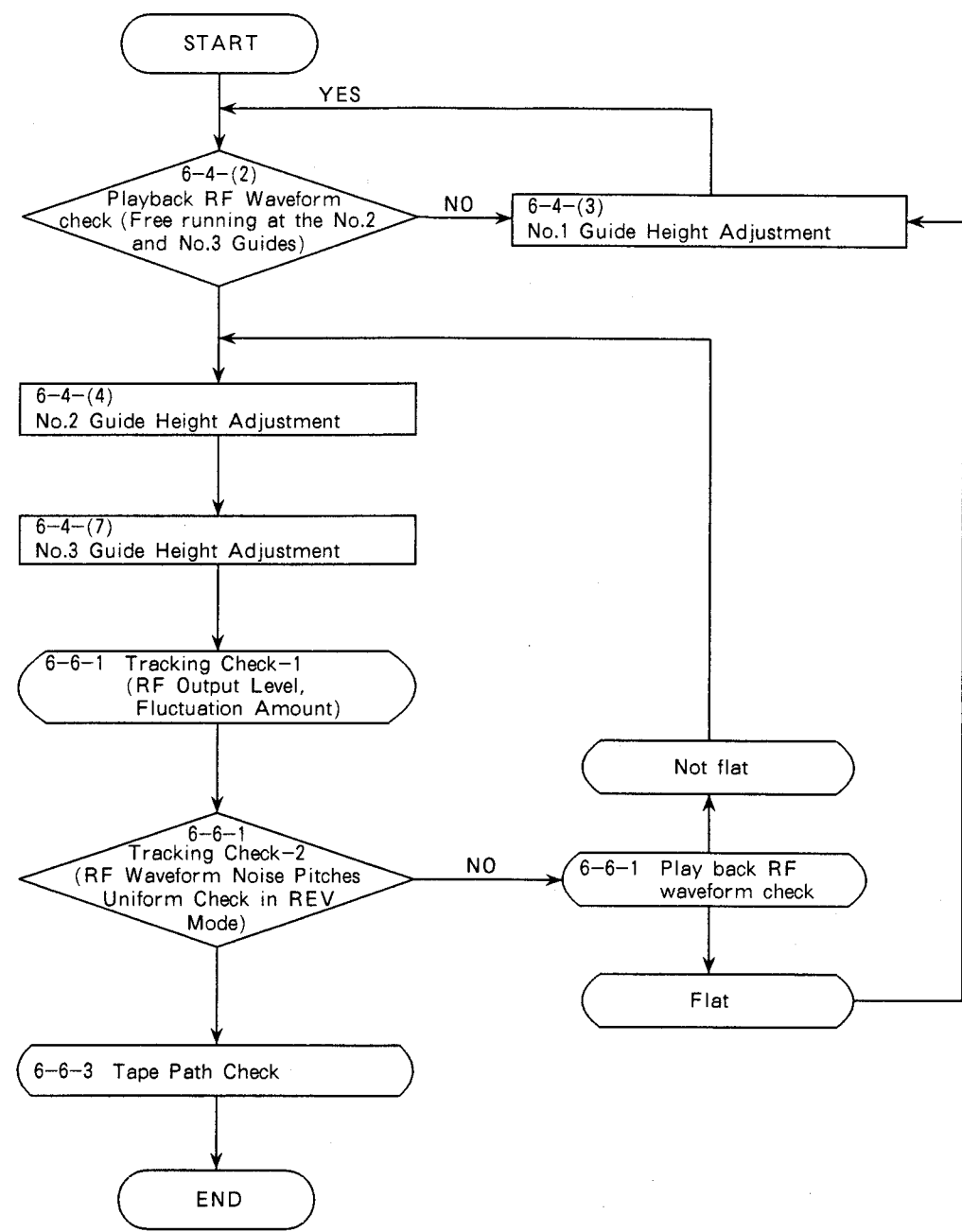


Fig. 2 Tape Guide Arrangement Diagram

6-3. TAPE PATH SYSTEM ADJUSTMENT TABLE



6-4. Tape Entrance Side Adjustment
Flow Chart of Adjustment



Mode: Play back the alignment tape
Tools: Alignment tape for tracking
(WR5-1CP) (Ref. No. J-5)
Oscilloscope
Track Shift Tool (Ref. No. J-14)
RF/SWP connector (Ref. No. J-15)
CTL connector (Ref. No. J-16)
Hexagonal screwdriver (across flat
has 0.89 mm) (Ref. No J-17)
Small adjustment mirror (Ref. No.
J-4)

- Preparation:**
- (i) Remove the Top Plate referring to Section 2-1.
 - (ii) Open the MB-19 Board referring to Section 2-5-5.
 - (iii) Connect the Track Shift Tool and oscilloscope to the unit referring to Sections 6-1 and 6-2.
 - (iv) Play back the alignment tape.

- Procedure:**
- (1) Remove the Fly Wheel referring to Section 4-1.
 - (2) Loosen the No. 2 Guide Lock Screw and turn the No. 2 and No. 3 Guides counterclockwise to free the tape path at the entrance side. (fig. 1 and 2)

Note: The space between upper and lower flanges of the No. 2 Guide is narrow. Therefore, check that the tape does not touch the upper and lower flanges. If loosen the No. 2 Guide too much, the tape touches the lower flange and the RF waveform at the entrance side exceeds the original free waveform.

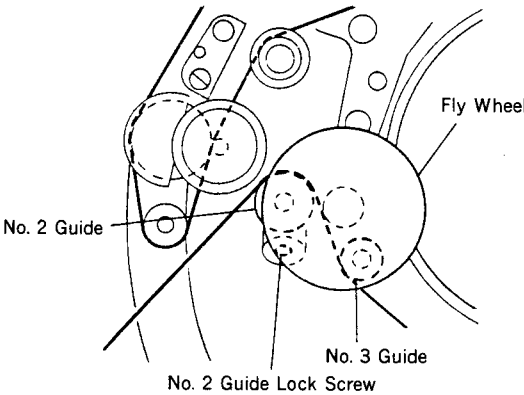


Fig. 1

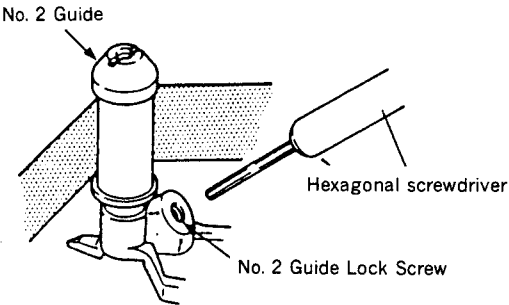


Fig. 2

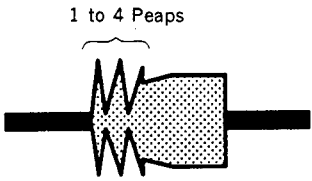


Fig. 3

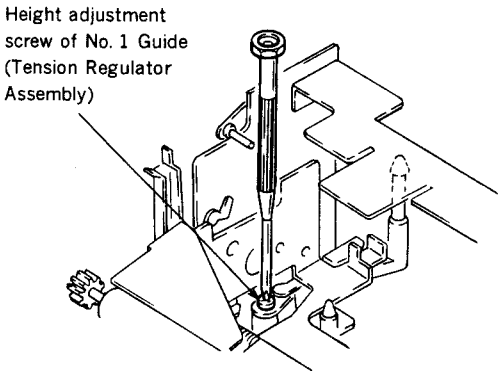


Fig. 4

- (3) Check that the RF waveform at the entrance side has 1 to 4 peaks in this condition. If not, adjust as follows. (fig. 3)

• less than 1 peak

Turn and adjust the height adjustment screw of the No. 1 Guide (Tension Regulator Arm Assembly) clockwise 90 degrees step. (fig. 4)

• more than 4 peaks

Turn and adjust the height adjustment screw (Tension Regulator Arm Assembly) counterclockwise 90 degrees step. (fig. 4)

- (4) Turn slowly the No. 2 Guide clockwise to flatten the waveform at the entrance side. (fig. 5)

Note: At this time, do not turn the No. 2 Guide too much.

- (5) Set the SEL switch of the Track Shift Tool to ON. Turn the Track Shift Knob and set the amplitude of the RF waveform to two-third position. (fig. 6)
- (6) Turn the No. 2 Guide and raise the entrance side waveform slightly. (fig. 7)
- (7) Flatten the waveform with the No. 3 Guide. (fig. 8)
- (8) Tighten the lock screw of the No. 2 Guide. (fig. 2)
- (9) After adjustment, perform Check After Adjustment referring to Section 6-6.
- (10) Smear locking compound to the No. 1 Guide Height Adjustment Screw and adjustment nut of the No. 3 Guide.
- (11) Install the Fly Wheel referring to Section 4-1.

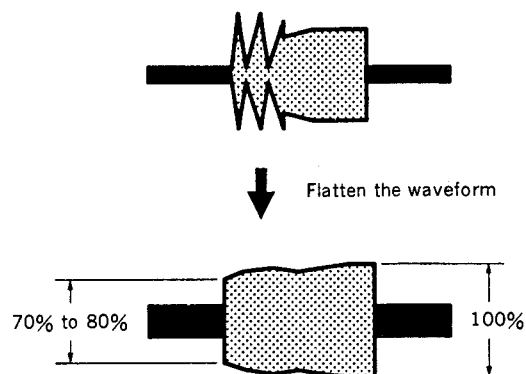


Fig. 5

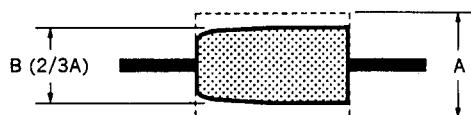


Fig. 6

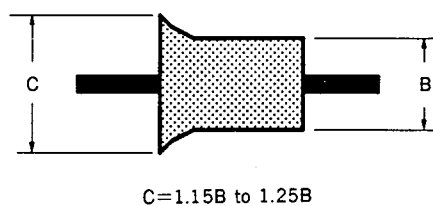


Fig. 7

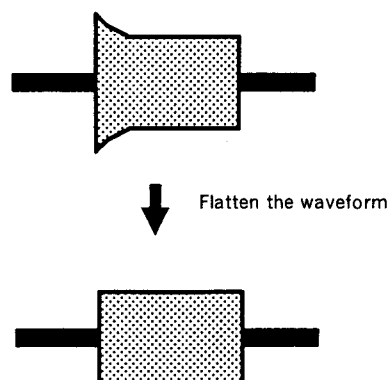
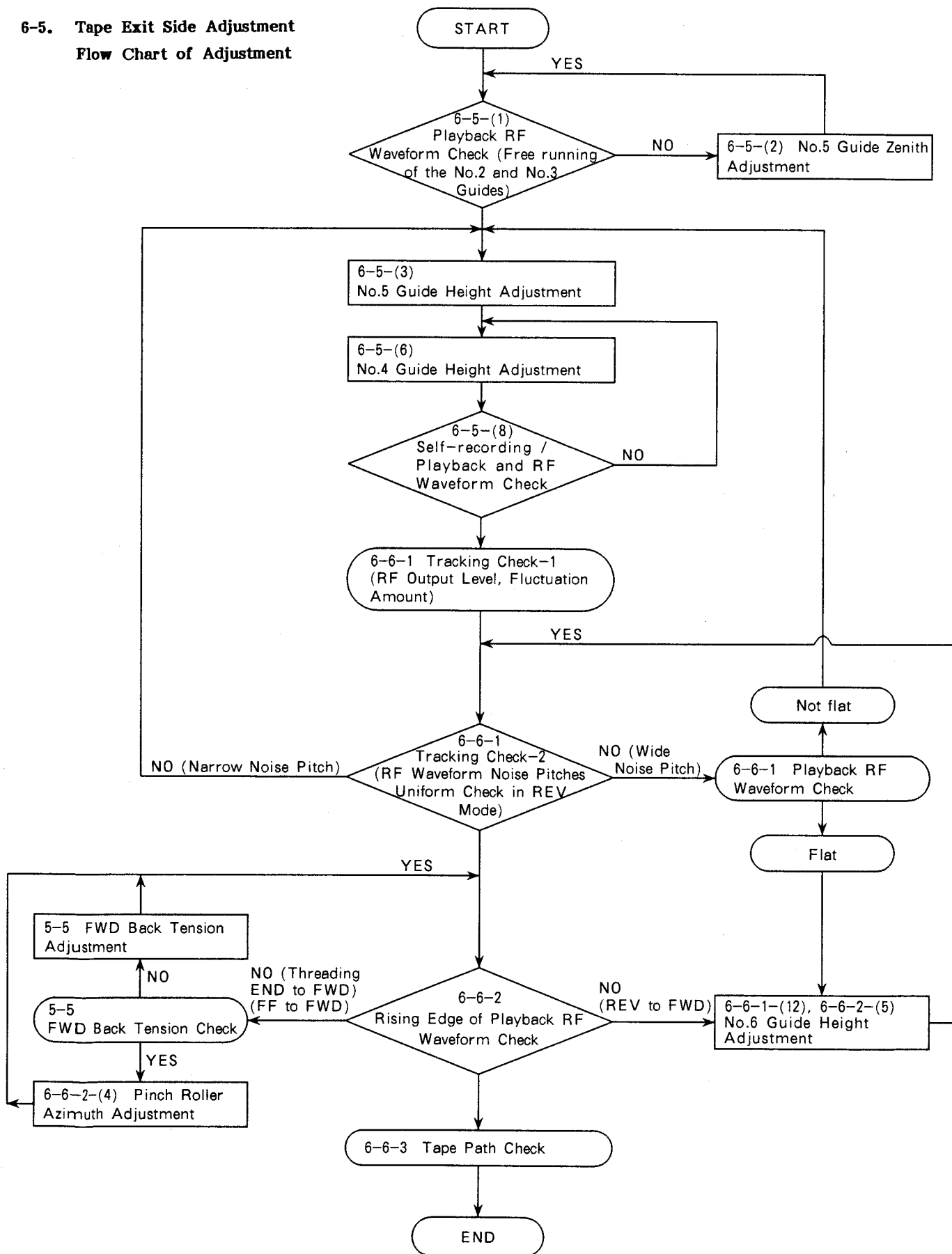


Fig. 8

6-5. Tape Exit Side Adjustment
Flow Chart of Adjustment



Mode: Play back the alignment tape

Tools: Alignment tape for tracking

(WR5-1CP) (Ref. No. J-5)

Oscilloscope

Track Shift Tool (Ref. No. J-14)

RF/SWP connector (Ref. No. J-15)

CTL connector (Ref. No. J-16)

Hexagonal screwdriver (across flat has 0.89 mm) (Ref. No. J-17)

Small adjustment mirror (Ref. No. J-4)

Cassette tape E5-90 (Hi8 ME tape)

Preparation:

- (i) Remove the Top Panel referring to Section 2-1.
- (ii) Open the MB-19 Board referring to Section 2-5-5.
- (iii) Connect the Track Shift Tool and oscilloscope to the unit referring to Section 6-1 and 6-2.
- (iv) Play back the alignment tape.

Procedure:

- (1) Turn the No. 4 and No. 5 Guides counterclockwise to free the tape path at the exit side. (fig. 1)

Note: If the No. 5 Guide nut is not loosen because of locking compound, dissolve locking compound with alcohol. Check that the tape does not touch the lower flange of the No. 5 Guide in free running.

- (2) Check that the RF waveform at the exit side has 2 to 3 peaks in this condition. If not, adjust as follows. (fig. 2)

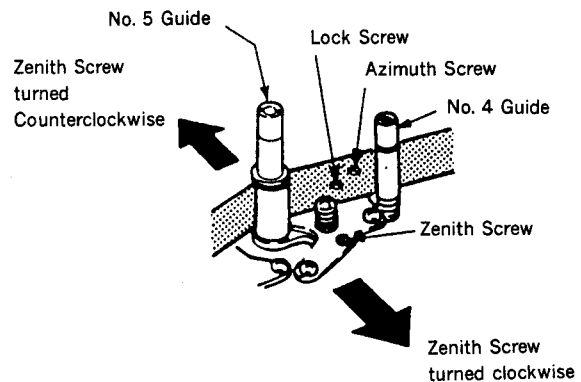


Fig. 1

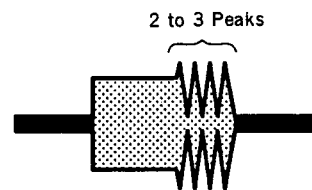


Fig. 2

1. Turn and loosen the lock screw counterclockwise.

less than 2 peaks

2. Turn and adjust slowly the zenith screw clockwise 45 degrees step.

more than 3 peaks

3. Turn and adjust slowly the zenith screw of the No. 5 Guide counterclockwise 45 degrees step.
4. Tighten the lock screw clockwise. (fig. 1)

Note: If tighten the lock screw too much, the waveform will change. Tighten suitably the lock screw. Never turn the azimuth screw of the No. 5 Guide.

- (3) Turn the No. 5 Guide clockwise and flatten the RF waveform at the exit side. (fig. 3)

Note: At this time, the waveform reaction is slow against the nut rotation. After check that the waveform variation is stabilized, turn the nut more.

- (4) Set the SEL switch of the Track Shift Tool to ON. Turn the Track Shift Knob and set the amplitude of the RF waveform to two-third position. (fig. 4)
- (5) Turn the No. 5 Guide and raise the exit side waveform slightly. (fig. 5)
- (6) Turn the No. 4 Guide and flatten the waveform. Then turn the No.4 Guide a little more as shown in the fig.6.
- (7) Eject the alignment tape.
- (8) Perform self-recording/playback with a cassette tape (E5-90) and check the RF waveform.

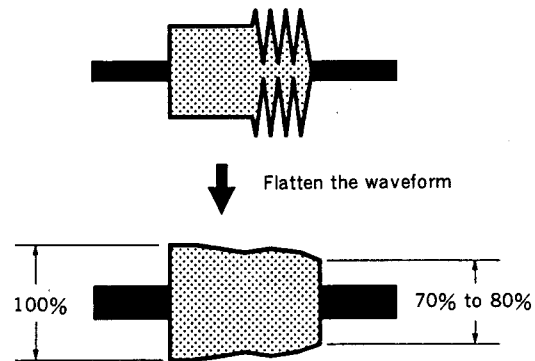


Fig. 3

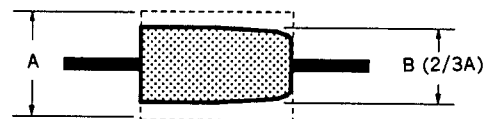
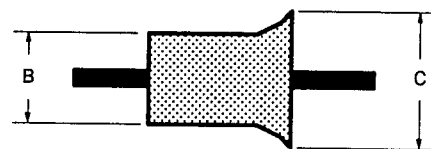


Fig. 4



$$C = 1.15B \text{ to } 1.25B$$

Fig. 5

1. Perform Hi8 Recording with no signal. (Use the cassette tape from tape top to middle.) Check the SP and Hi8 of the indicator section on the front panel are lighting in this mode.
 2. Play back the cassette tape, check that the RF waveform (CH 1 and CH 2) at the exit side meet the specification as shown in the fig.7. If not, adjust the height of No.4 Guide again within the specification as shown in the fig.6. Perform the steps 1 and 2 and check that it meet the specification as shown in the fig.7.
- (9) After adjustment, perform the Check After Adjustment referring to Section 6-6.
 - (10) Smear locking compound to the lock screw, zenith screw and adjustment nuts of No.4 Guide and No.5 Guide.

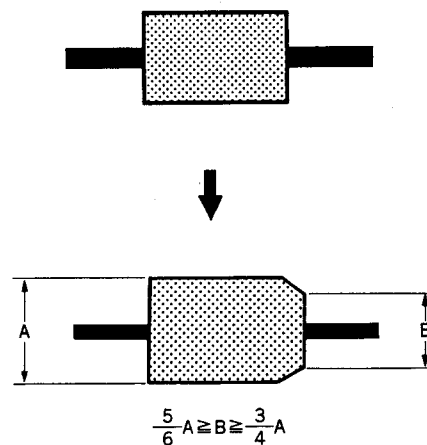
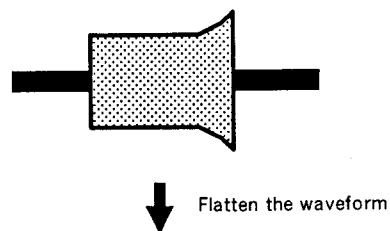


Fig. 6

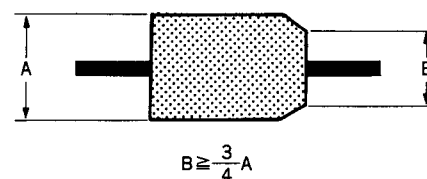


Fig. 7

6-6. CHECK AFTER ADJUSTMENT

Tool: No. 6 Guide Lock Tool (Ref. No. J-10)

Alignment tape for tracking
(WR5-1CP) (Ref. No. J-5)

1. Video Tracking Check

- (1) Play back the alignment tape for tracking.
- (2) Set the SEL switch of the Track Shift Tool to ON. Turn the Track Shift Knob and set the amplitude of the RF waveform to two-third position. (fig. 1)
- (3) In this time, check that the amplitude minimum value (E MIN) of the RF waveform is more than 75% of maximum value (E MAX). (fig. 2)
- (4) In this time, check that the fluctuation amount of the RF waveform at entrance and exit sides meet the required specification as shown in figure. 3.
- (5) Set the SEL switch of the Track Shift Tool to OFF.
- (6) Set to the REV mode and check that the noise pitches of the waveform are uniform. (fig. 4) If not, adjust as follows.

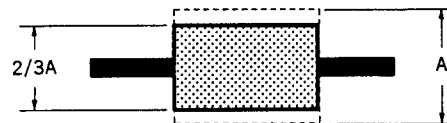


Fig. 1



Fig. 2

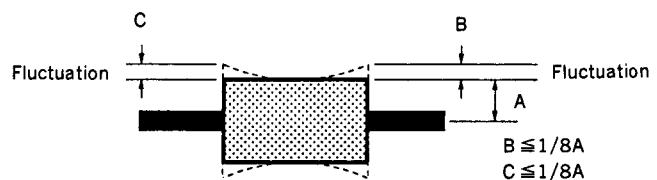
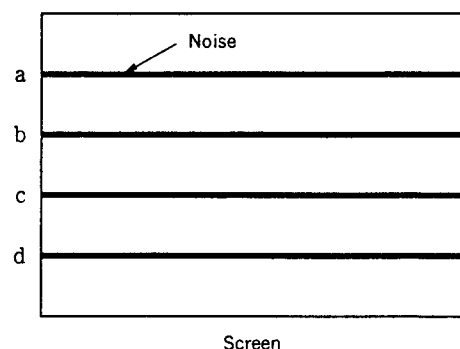
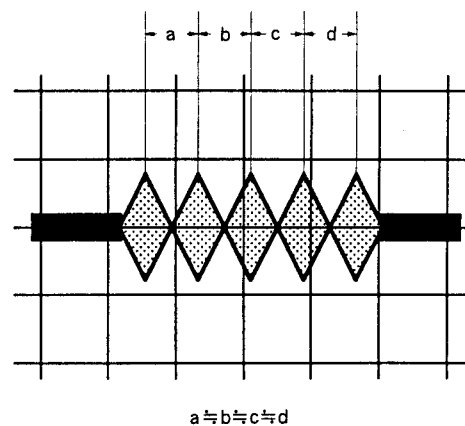


Fig. 3



Screen

Fig. 4

When the noise pitch is narrow at the entrance side (upper of screen). (fig. 5)

(7) Check that the RF waveform is flat in the PLAY mode.

(8) Perform the height adjustment of the No. 1 Guide referring to Section 6-4.

Note: After adjustment, perform the Tracking Check referring to Section 6-6-1.

When the RF waveform is not flat.

(9) Perform the height adjustment of the No. 2 and No. 3 Guides referring to Section 6-4.

Note: After adjustment, perform the Tracking Check referring to Section 6-6-1.

When the noise pitch is narrow at the exit side (lower of screen). (fig. 6)

(10) Set to PLAY mode and perform the height adjustment of the No. 4 and No. 5 Guides referring to Section 6-5. After adjustment, perform the Tracking Check referring to Section 6-6-1 and check that it meet the required specification.

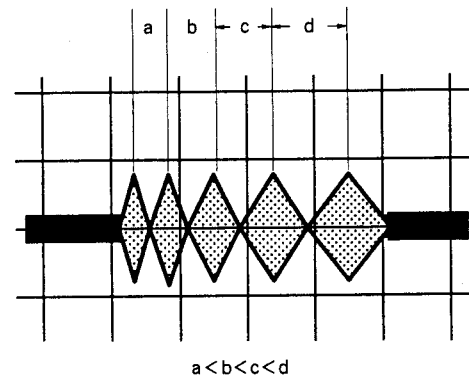


Fig. 5

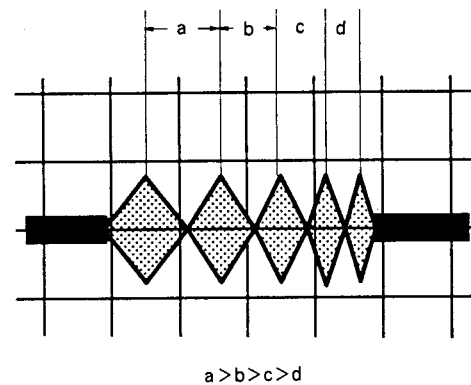


Fig. 6

When the noise pitch is wide at the exit side (lower of screen). (fig. 7)

- (11) Set to PLAY mode and check that the RF waveform is flat.
- (12) Turn and loosen the Guide Lower Gear counterclockwise with the No. 6 guide lock tool. (fig. 8)
- (13) Turn the No. 6 Guide and perform the height adjustment.

Note: At this time, if the No. 6 Guide is raised too much, the wrinkles may occur between the capstan shaft and No. 5 Guide (A portion). Check that the wrinkles are not occur. (fig. 9)

- (14) Turn and *lock the Guide Lower Gear clockwise with the NO. 6 guide lock tool.

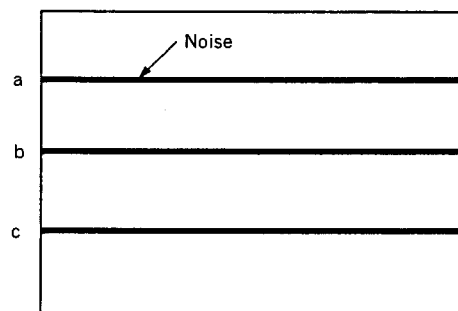
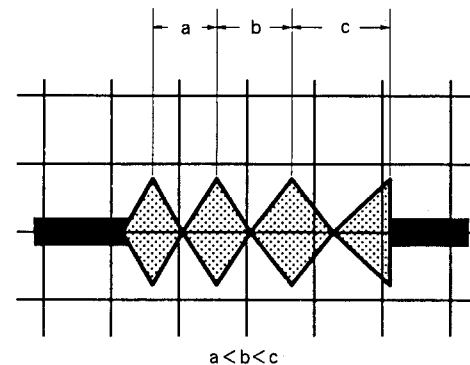
*Touch the Guide Lower Gear against the lower flange of the No. 6 Guide and turn it more about 10 degrees.

Note: After adjustment, perform the Tracking Check referring to Section 6-6-1.

When the waveform is not flat.

- (15) Perform the height adjustment of the No. 4 and No. 5 Guides referring to Section 6-5.

Note: After adjustment, perform the Tracking Check referring to Section 6-6-1.



Screen

Fig. 7

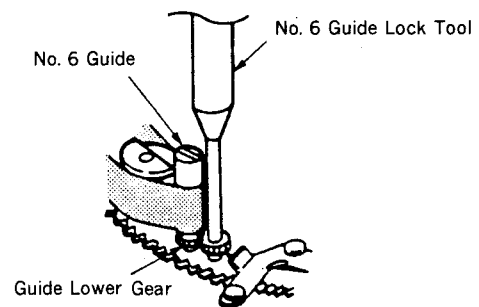


Fig. 8

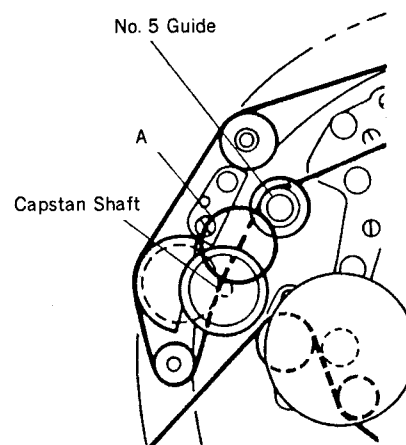


Fig. 9

2. Rising Edge of Waveform Check

- (1) Check that the RF waveform rises horizontally (flat waveform) in playback after threading is completed, playback after CUE/REV or FF mode. If the RF waveform do not rise horizontally, adjust as follows.

After threading is completed, when the noise occurs at the playback rising edge at the exit side. (lower of screen) (fig. 11).

- (2) Check the FWD Back Tension.

When the FWD Back Tension is too low.

- (3) Adjust again FWD Back Tension
Adjustment referring to Section 5-5.

When the FWD Back Tension is normal.

- (4) while adjusting the playback rising edge, turn the azimuth screw of the Pinch Roller clockwise about 5 degrees step. (fig.12)

After REV mode, when the noise occurs at the playback rising edge at the exit side. (lower screen)(fig. 11)

- (5) Turn and loosen the Guide Lower Gear counterclockwise with No. 6 Guide Lock Tool. (fig. 8)
- (6) Turn the No. 6 Guide and perform the height adjustment.

Note: At this time, if the No. 6 Guide is raised too much, the wrinkles may occur between the capstan shaft and No. 5 Guide (A portion). Check that the wrinkles are not occur. (fig. 9)

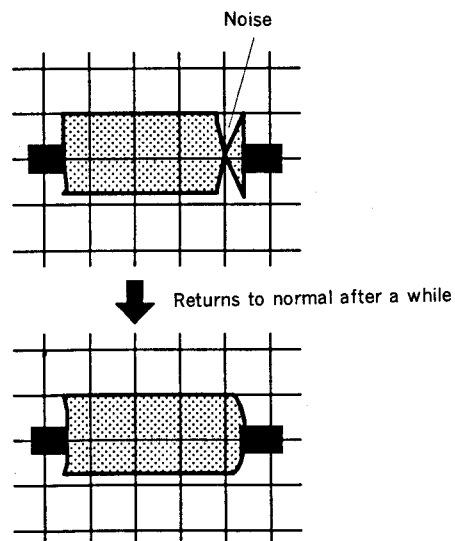


Fig. 11

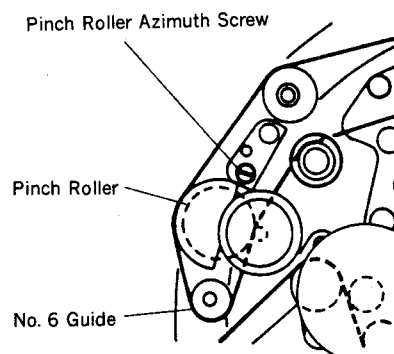


Fig. 12

After FF mode, when the noise occurs at the playback rising edge at the exit side.
(lower of screen)(fig. 11)

(7) Check that the FWD Back Tension.

When the FWD Back Tension is too low.

(8) Adjust again FWD Back Tension
Adjustment referring to Section 5-5

When the FWD Back Tension is normal.

(9) While adjusting the playback rising edge, turn the azimuth screw of the Pinch Roller clockwise about 5 degrees step. (fig. 12)

Note: After adjustment, be sure to check the playback rising edge after threading is completed.

3. Tape Running Check

Check the tape running at the flange of the Guides (shown by arrows) in PLAY and REV modes.

No.1, No.2, No.3. No.5 Guides:

... Tape runs in contact with upper or lower flange. Less than 0.3 mm tape curl is acceptable.

No.6 Guide:

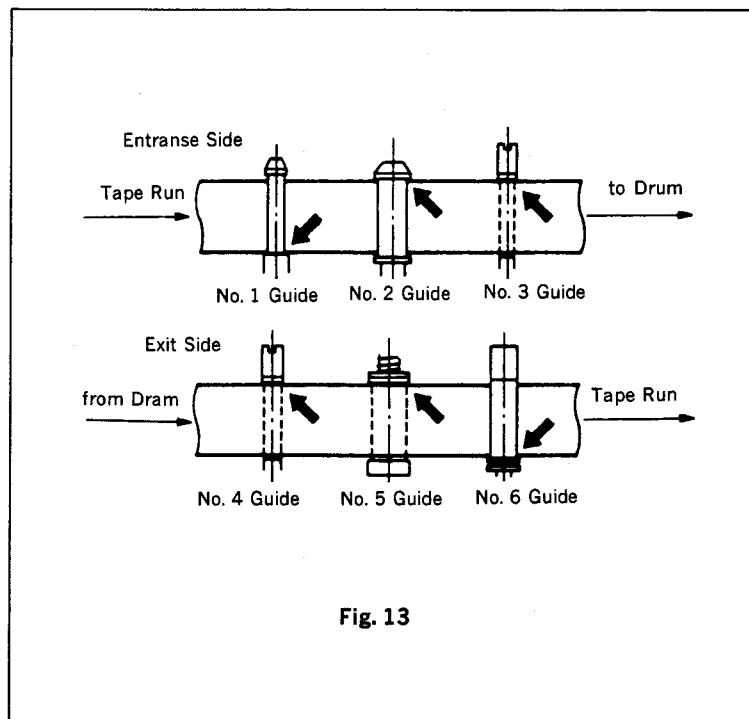
... Tape runs in contact with lower flange without curl.

No.4 Guide:

... Tape runs in contact with upper flange. Less than 0.5 mm tape curl is acceptable.

NOTE: After checking, smear locking compound these points.

- . No.1 Guide height adjustment screw
- . No.5 Guide lock screw and zenith screw
- . adjustment nut of No.3 Guide
- . adjustment nut of No.4 Guide
- . adjustment nut of No.5 Guide



SECTION 7 POWER SUPPLY AND SYSTEM CONTROL ALIGNMENT

[Equipment Required]

- Digital voltmeter

7-1. +5V ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|----------------------------------|------------------------------------|------------------|
| • E-E mode | TP3/DC-45A (C-1) 5.14±0.05V | RV1/DC-45A (F-1) |

7-2. RF DET LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|----------------------------------|--|-------------------|
| • E-E mode | TP4/DI-12 (L-3) Value of this time is A | |
| | TP3/DI-12 (L-3) A=0.1±0.01Vdc | RV403/DI-12 (L-3) |

SECTION 8 SERVO SYSTEM ALIGNMENT

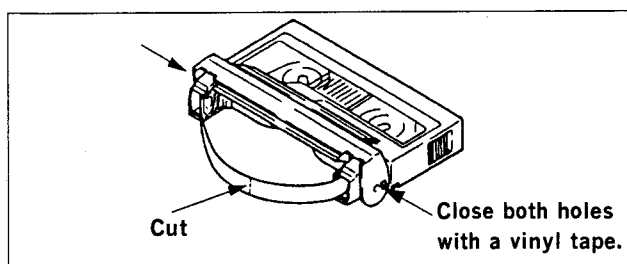
[Equipment Required]

- Oscilloscope
- Frequency counter
- Digital voltmeter
- Alignment tape

| Name (Part No.) | REC mode | Tape Type | Tape Speed | Contents | |
|--|----------|-----------|------------|---|--------------------------------------|
| | | | | Video Area | PCM Area |
| Switching position WR2-3CS (8-967-992-17) | STD | MP | SP | CH-1: 3MHz CH-2: 3MHz Marker Width: $100 \pm 10 \mu\text{sec}$. | |
| SP operation check WR5-8CSE (8-967-995-48) | Hi8 | ME | SP | VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod. | AUDIO SIGNAL (PCM) 400 Hz 20 min. |
| LP operation check WR5-8CLE (8-967-995-57) | Hi8 | ME | LP | VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod. | AUDIO SIGNAL (PCM) 400 Hz 40 min. |

- Empty cassette (See below.)

1. Draw out a tape and cut it.
2. Cover two holes on both side of the cassette with a vinyl tape.



8-1. CAPSTAN FG DUTY ADJUSTMENT

Remove the Bottom Plate and open the HK-5 Board for this adjustment. If it does not meet the specification, remove the mechanical deck and adjust again.

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---------------------------|
| <ul style="list-style-type: none"> • Connect each TP001 AND TP002 on the SE-10P board to ground with jumper wires. • Insert the empty cassette tape and put the machine into the play back mode. • After adjustment, remove the jumper wires. | <p>TP105/SE-10P (D-4)</p> <p style="text-align: center;">$A \approx B$</p> | <p>RV801/MD-23P (D-3)</p> |

8-2. REEL FG ADJUSTMENT

Remove the mechanical deck for this adjustment.

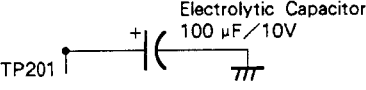
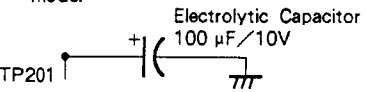
Connect only CN907 on the SE-10P Board.

| Machine condition for adjustment | Specifications | Adjustments |
|---|--|--------------------|
| <ul style="list-style-type: none">• Play back the alignment tape WR5-8CLE. | TP901/MD-23P (G-1) 21±1Hz | RV901/MD-23P (G-1) |
| <ul style="list-style-type: none">• Perform confirmation while playing back the alignment tape WR5-8CLE. | TP902/MD-23P (E-1) 1.0 through 1.4Vdc | |
| <ul style="list-style-type: none">• Perform confirmation while playing back the alignment tape WR5-8CLE with CUE (×9) mode. CUE (×9) : While pressing the PB button, press the FF button on the MB-19 Board.• After adjustment, install the mechanical deck. | TP901/MD-23P (G-1) 37 through 50 Hz TP902/MD-23P (E-1) 1.4 through 1.9Vdc | |

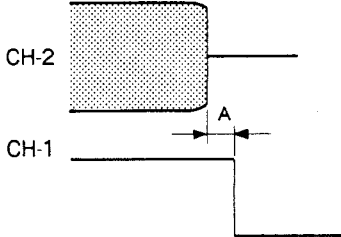
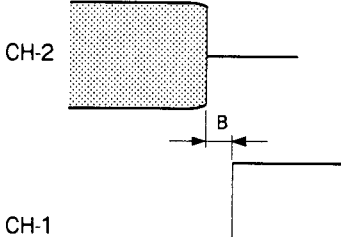
8-3. DRUM FREE SPEED ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--------------------------------------|--------------------|
| <ul style="list-style-type: none">• VIDEO IN : No signal• Use the Hi8 ME tape.• REC mode | TP101/SE-10P (D-6) 1.9±0.1Vdc | RV102/SE-10P (E-6) |

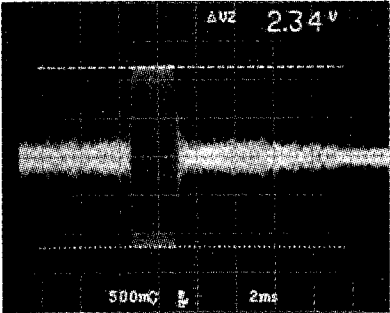
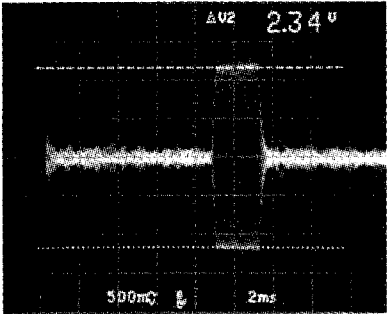
8-4. CAPSTAN FREE SPEED ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---------------------------|
| <p>Step 1</p> <ul style="list-style-type: none"> Connect TP201/SE-10P (H-3) to ground with electrolytic capacitor (100 μF/10V) during STOP mode.  <ul style="list-style-type: none"> Connect TP002/SE-10P (D-6) to ground with jumper wire during STOP mode. Play back the alignment tape WR5-8CSE. After adjustment, remove the jumper wire and capacitor. | <p>TP105/SE-10P (D-4)</p> <p>1341\pm1 Hz</p> | <p>RV106/SE-10P (D-5)</p> |
| <p>Step 2</p> <ul style="list-style-type: none"> Connect TP201/SE-10P (H-3) to ground with electrolytic capacitor (100 μF/10V) during STOP mode.  <ul style="list-style-type: none"> Connect TP002/SE-10P (D-6) to ground with jumper wire during STOP mode. Connect pin 4 of CN901/SE-10P (A-5) to ground with jumper wire during STOP mode. Play back the alignment tape WR5-8CSE. After adjustment, remove the jumper wire and capacitor. | <p>TP105/SE-10P (D-4)</p> <p>670\pm1 Hz</p> | <p>RV105/SE-10P (D-5)</p> |

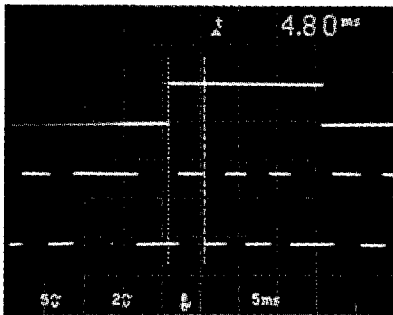
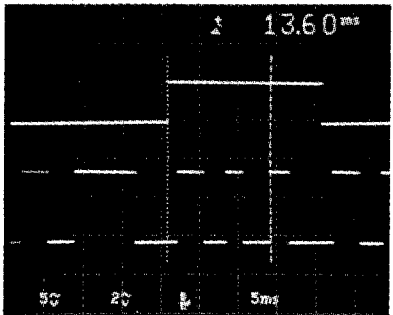
8-5. SWITCHING POSITION ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|--|
| <div>• Play back the alignment tape WR2-3CS.</div> | <div>CH-1 : TP061/FR-43 (B-2) CH-2 : CN004-4/FR-43 (A-2)</div> <div></div> <div>A=0±10μsec</div> | <div>●RV101/SE-10P (C-6)</div> <div>Trigger: TP061/FR-43 (B-2)</div> |
| | <div>CH-1 : TP061/FR-43 (B-2) CH-2 : CN004-3/FR-43 (A-2)</div> <div></div> <div>B=0±10μsec</div> | <div>Trigger: TP061/FR-43 (B-2)</div> |

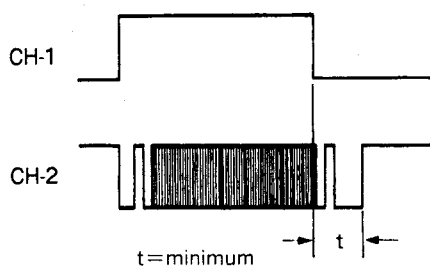
8-6. ATF BPF BALANCE ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|--|
| <ul style="list-style-type: none">• Connect TP208/SE-10P (H-3) to ground with jumper wire.• VIDEO IN: color-bar signal• Preform the self-recording /play back with a Hi8 ME tape.• After adjustment, remove the jumper wire. | <p>IC201-12/SE-10P (G-4)</p>  <p>47kHz</p> <p>IC201-11/SE-10P (G-4)</p>  <p>16kHz</p> <p>A=B</p> | <p>RV201/SE-10P (G-4)</p> <p>Trigger: TP103/SE-10P (F-3)</p> |

8-7. STILL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|--|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • Perform the self-recording/play back with a Hi8 ME tape. • JOG mode • Turn the Search Dial in the FWD direction and narrow the pulse width of A. | CH-1: TP103/SE-10P (F-3) CH-2: TP204/SE-10P (F-5)  $4.8 \pm 0.1 \text{ msec}$ | ● RV203/SE-10P (H-3) Trigger: TP103/SE-10P (F-3) |
| | CH-1: TP103/SE-10P (F-3) CH-2: TP204/SE-10P (F-5)  $13.6 \pm 0.1 \text{ msec}$ | ● RV204/SE-10P (H-3) Trigger: TP103/SE-10P (F-3) |

8-8. SP SLOW ADJUSTMENT

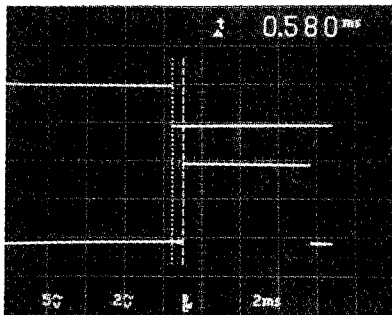
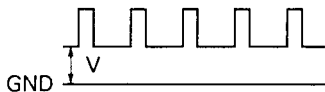
| Machine condition for adjustment | Specifications | Adjustments |
|---|---|---|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • Using P5-MP series tape, perform the short recording of the color-bar signal at the end of tape. • Connect TP001/SE-10P (C-2) to ground with jumper wire. • Connect the counter to TP1/DI-12 (L-4). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.) • After adjustment, remove the jumper wire. | <p>CH-1: TP103/SE-10P (F-3) CH-2: TP105/SE-10P (D-4)</p>  <p>When the noise appears on the monitor screen, adjust RV104 so that the noise at the bottom of the screen disappears.</p> | <ul style="list-style-type: none"> ● RV304/SE-10P (E-2) ● RV104/SE-10P (D-5) <p>Trigger: TP302/SE-10P (F-3)</p> |

8-9. LP SLOW ADJUSTMENT

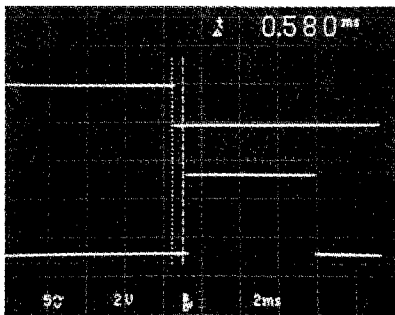
Note: This adjustment should be performed after completion of "8-8. SP SLOW ADJUSTMENT".

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|--|
| <ul style="list-style-type: none"> • Connect pin 4 of CN901/SE-10P (A-5) to ground with jumper wire. • VIDEO IN: color-bar signal • Perform the a short recording of the color-bar signal at the end of P5-MP series tape. • Connect TP001/SE-10P (C-2) to ground with jumper wire. • Connect the counter to TP1/DI-12 (L-4). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.) • After adjustment, remove jumper wires. | <p>When the noise appears on the monitor screen, adjust RV103 so that the noise at the bottom of the screen disappears.</p> | <ul style="list-style-type: none"> ● RV103/SE-10P (E-5) |

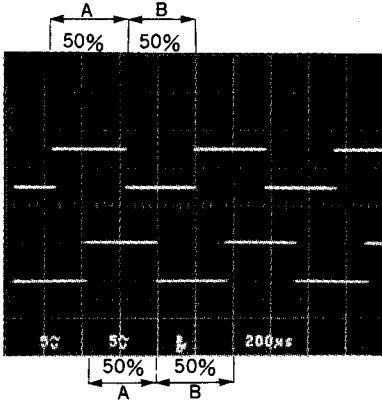
8-10. SP SLOW fH ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|----------------------|
| Step 1 <ul style="list-style-type: none"> Perform the short recording of the color-bar signal with a Hi8 ME tape. Connect the counter to TP1/DI-12 (L-4). Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 32 Hz. Play back the recorded portion. (It corresponds to one-thirtieth time speed.) | CH-1: TP103/SE-10P (F-3) CH-2: TP102/SE-10P (D-5)  $580 \pm 10 \mu\text{sec}$ | ⚙ RV301/SE-10P (F-1) |
| Step 2 <ul style="list-style-type: none"> Perform the short recording of the color-bar signal with a Hi8 ME tape. Connect the counter to TP1/DI-12 (L-4). Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.) | TP301/SE-10P (E-2)  $V = 1.5 \pm 0.1 \text{ Vdc}$ | ⚙ RV303/SE-10P (E-1) |

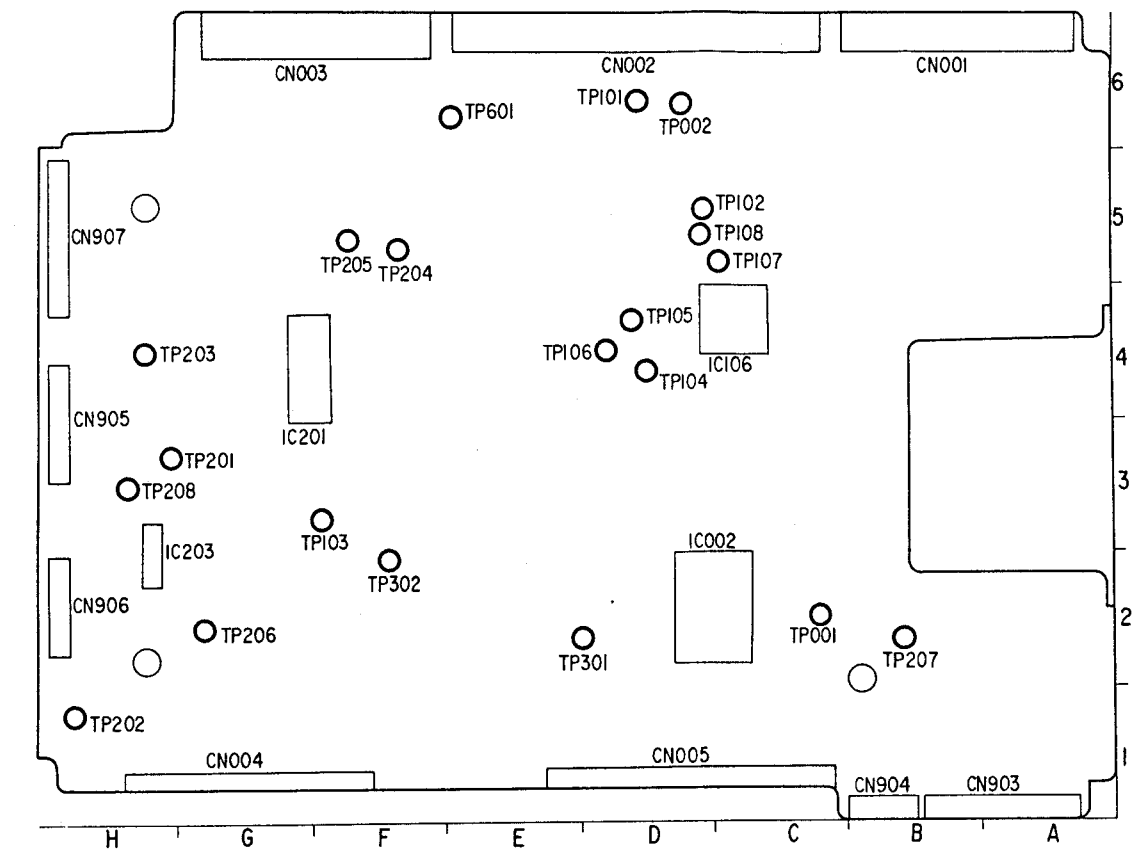
8-11. LP SLOW fH ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|----------------------|
| <ul style="list-style-type: none"> Connect pin 4 of CN901/SE-10P (A-5) to GND with jumper wire. Perform the short recording of the color-bar signal with a Hi8 ME tape. Connect the counter to TP1/DI-12 (L-4). Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is about 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.) | CH-1: TP103/SE-10P (F-3) CH-2: TP102/SE-10P (D-5)  $580 \pm 10 \mu\text{sec}$ | ⚙ RV302/SE-10P (F-2) |

8-12. CAPSTAN FG ADJUSTMENT

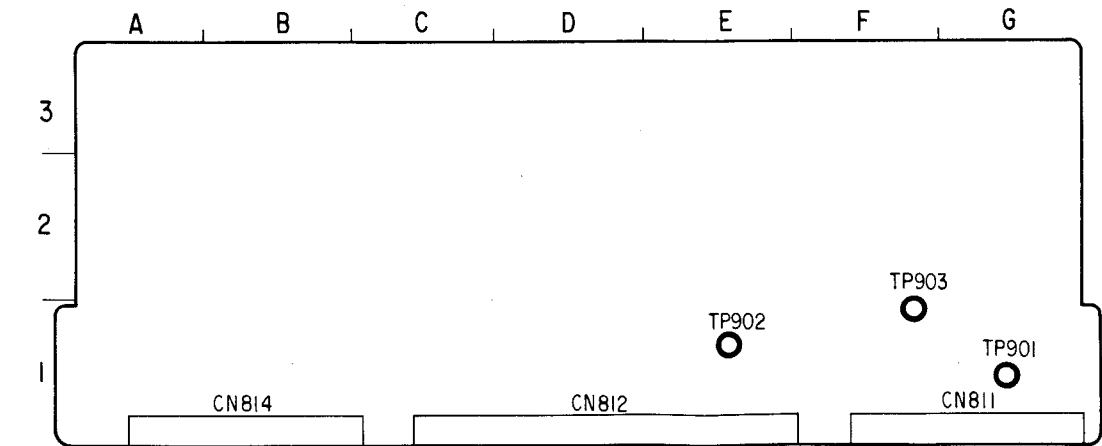
| Machine condition for adjustment | Specifications | Adjustments |
|---|--|--|
| <div>• Play back the alignment tape WR5-8CSE.</div> | <div>CH-1 : TP1/DI-12 (L-4) CH-2 : TP2/DI-12 (L-3)</div> <div></div> <div>When the TP1 signal is rising-up, TP2 is Low level.</div> | <div>CH-1 ●RV401/DI-12 (M-3) CH-2 ●RV402/DI-12 (K-3)</div> |

Location of TPs on the SE-10P Board.

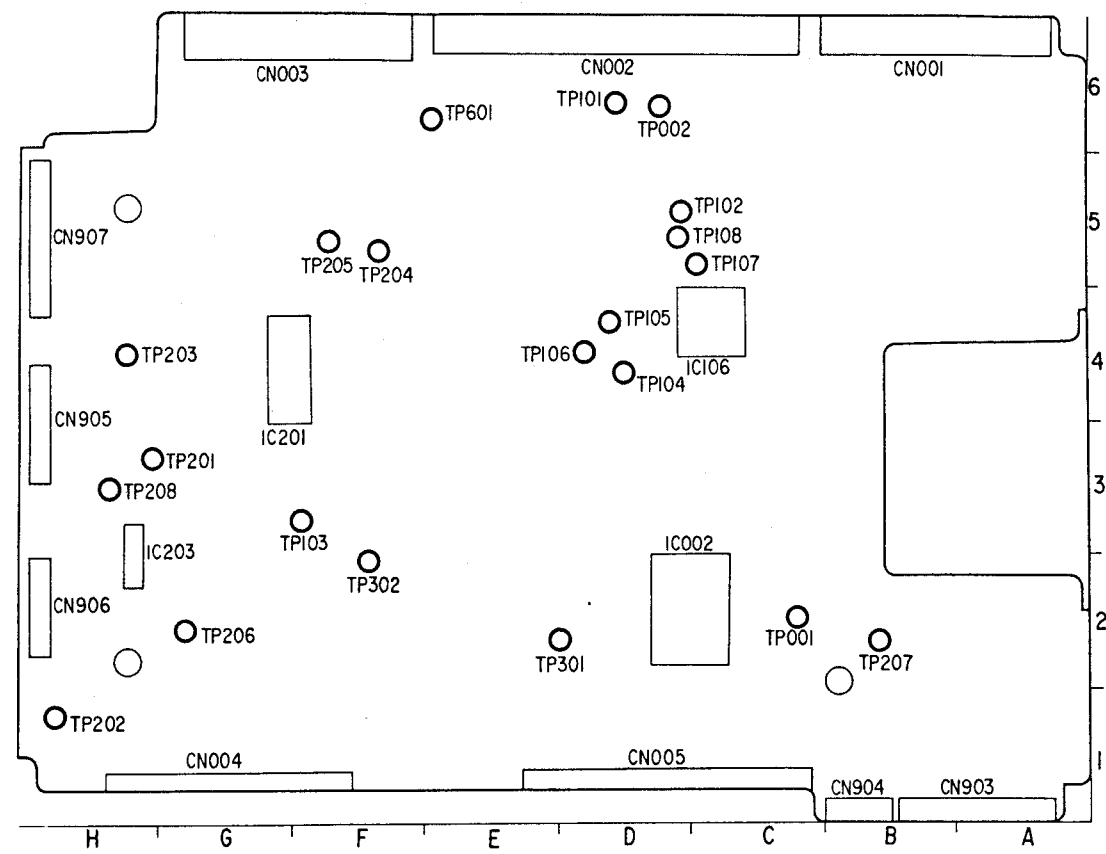


Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-5 Board.

Location of TPs on the MD-23P Board.

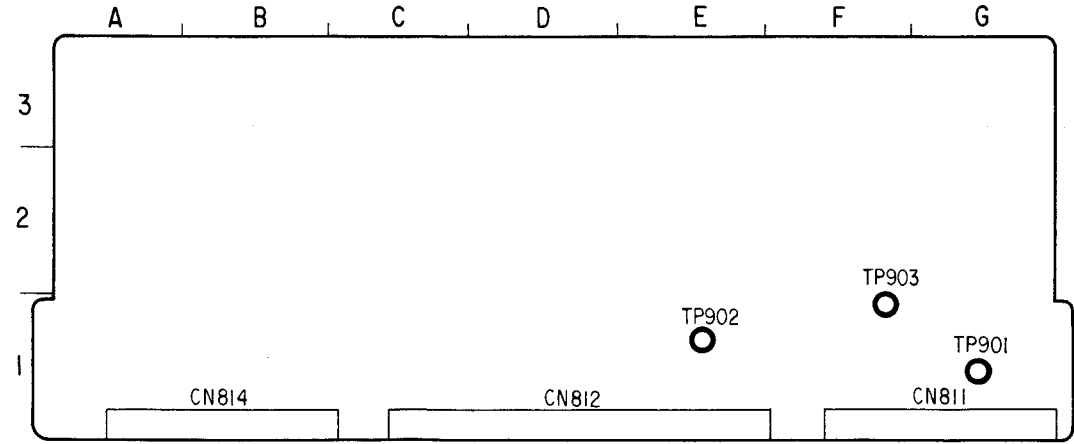


Location of TPs on the SE-10P Board.

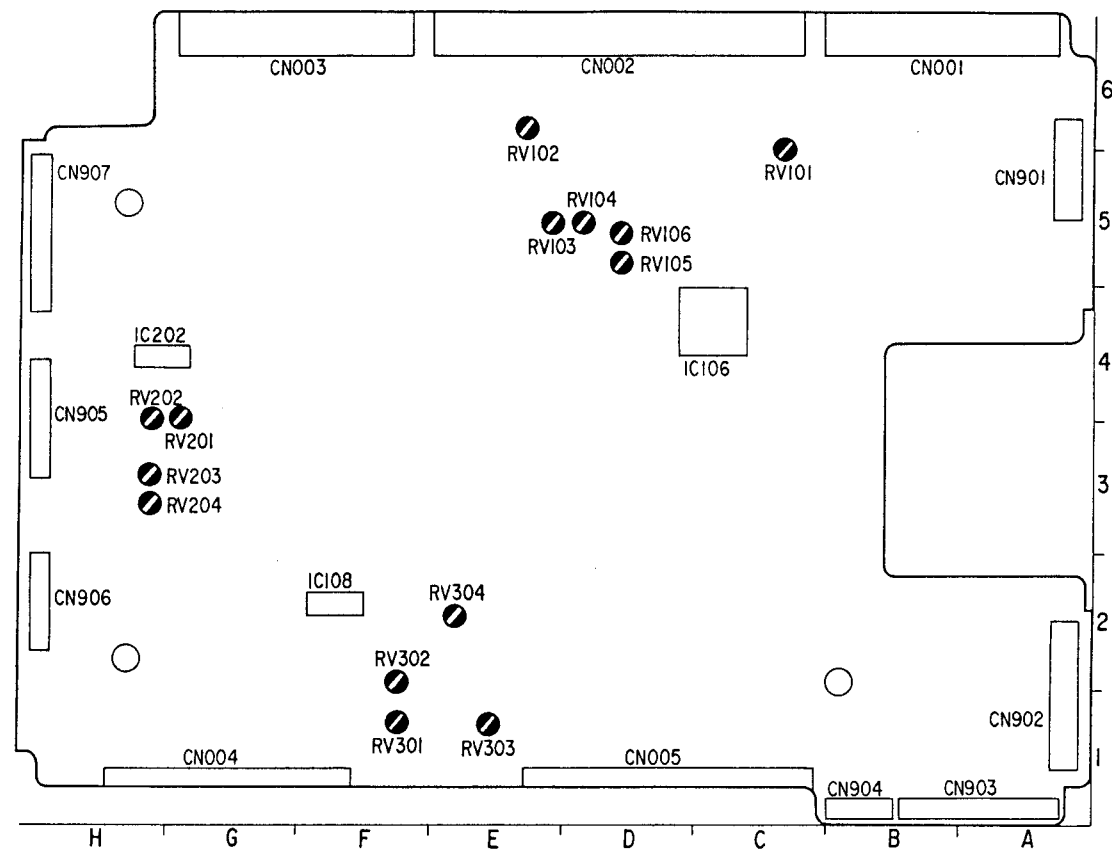


Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-5 Board.

Location of TPs on the MD-23P Board.

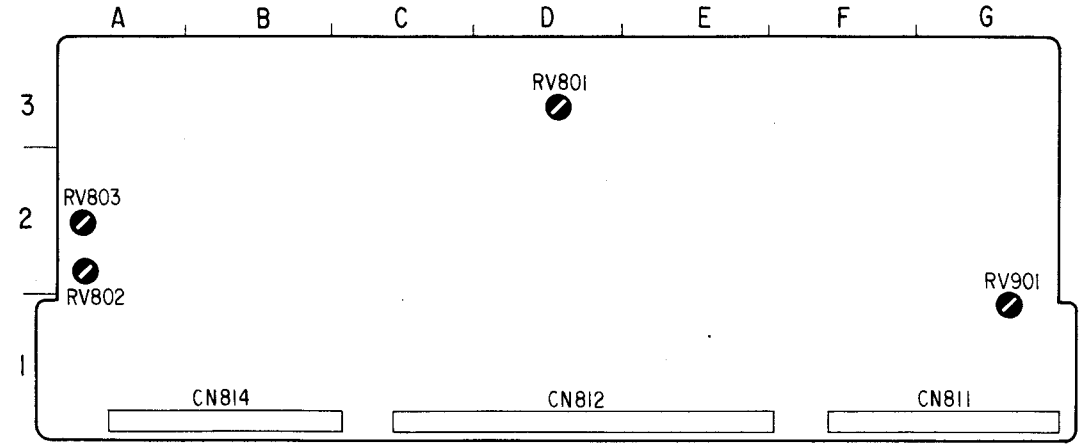


Location of RVs on the SE-10P Board.



Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-5 Board.

Location of RVs on the MD-23P Board.



Adjust RVs from the soldering side holes. (It is unnecessary to remove the MD-23P Board from the mechanical deck.)

SECTION 9 AUDIO SIGNAL SYSTEM ALIGNMENT

[Equipment Required]

- Oscilloscope
- Frequency counter
- Audio signal generator
- Audio level meter
- Digital voltmeter
- Alignment tape

| Name (Part No.) | REC mode | Tape Type | Tape Speed | Contents | |
|--|----------|-----------|------------|---|--------------------------------------|
| | | | | Video Area | PCM Area |
| SP operation check WR5-8CSE (8-967-995-48) | Hi8 | ME | SP | VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod. | AUDIO SIGNAL (PCM) 400 Hz 20 min. |

9-1. PCM MASTER CLOCK ADJUSTMENT

Note: Before adjustment, remove the PA-27 board.

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---------------------|
| <ul style="list-style-type: none"> • Connect pin 14 of IC853/PD-19 (A-1) and pin 11 of CN852/PD-19 (A-2) with jumper wire. • E-E mode • After the adjustment, remove jumper wire. | IC853-8/PD-19 (A-1) $11.45 \pm 0.01 \text{ MHz}$ | ① RV851/PD-19 (A-2) |

9-2. PCM PLAYBACK VCO FREE-FREQUENCY ADJUSTMENT

Note: Before adjustment, remove the PA-27 board.

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|---------------------|
| <ul style="list-style-type: none"> • Connect pin 9 of CN851/PD-19 (B-1) and pin 11 of CN852/PD-19 (C-3) with jumper wire. • Connect pins 7 and 8 of CN852/PD-19 (C-3) with jumper wire. • E-E mode • After the adjustment, remove jumper wires. | IC854-8/PD-19 (A-2) $11.58 \pm 0.05 \text{ MHz}$ | ① RV854/PD-19 (A-2) |

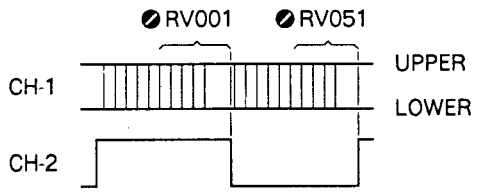
9-3. D/A CONVERTER LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|---------------------|
| <ul style="list-style-type: none"> Play back the Audio 400 Hz portion of the alignment tape WR5-8CSE. | CN001-16/PA-27 (A-2) -4.0 ± 0.2 dBs | ⚙ RV032/PA-27 (A-1) |

9-4. NR DECODE LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|---------------------|
| <ul style="list-style-type: none"> Play back the Audio 400 Hz portion of the alignment tape WR5-8CSE. | CN001-20/PA-27 (A-3) -14.0 ± 0.5 dBs <ul style="list-style-type: none"> If adjustment value doesn't meet the specification, change the value of resistors as follows and perform adjustment again. R062 12k \rightarrow 13k R012 12k \rightarrow 13k | ⚙ RV031/PA-27 (C-1) |

9-5. A/D CONVERTER OFFSET ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|--|--|
| <ul style="list-style-type: none"> Connect pin 8 of CN001/PA-27 (A-2) to pin 17 of CN001/PA-27 (A-2) with jumper wire. Connect pins 15 and 18 of CN001 with jumper wire. Connect pins 4 and 5 of CN001 with jumper wire. REC mode (no signal input) After adjustment, remove jumper wires. | CH-1: CN001-11/PA-27 (A-2) CH-2: CN001-9/PA-27 (A-2)  Adjust upper and lower brightnesses for the same. | L-CH ⚙ RV001/PA-27 (B-2) R-CH ⚙ RV051/PA-27 (B-1) |

9-6. PCM REC LEVEL ADJUSTMENT

Note: This adjustment should be performed after completion of 9-4. NR DECODED LEVEL ADJUSTMENT.

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|-----------------------------|
| <ul style="list-style-type: none"> AUDIO LINE IN: 400Hz/−10dB Preform the self-recording/play back with a Hi8 ME tape. | L-CH: CN001-20/PA-27 (A-3) -13.5 ± 0.1 dB | L-CH ⚙ RV002/PA-27 (B-3) |
| | R-CH: CN001-1/PA-27 (A-1) -13.5 ± 0.1 dB | R-CH ⚙ RV052/PA-27 (B-1) |

9-7. PCM PB LINE OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|-------------------------------|
| <ul style="list-style-type: none"> • OUTPUT SELECT: PCM • Play back the 400 Hz portion of the alignment tape WR5-8CSE. | CH-1 AUDIO OUT connector (terminated with 600Ω) $4.0 \pm 0.3 \text{ dBm}$ | CH-1 ⚙️ RV301/AU-127 (J-4) |
| | CH-2 AUDIO OUT connector (terminated with 600Ω) $4.0 \pm 0.3 \text{ dBm}$ | CH-2 ⚙️ RV302/AU-127 (K-4) |

9-8. AFM PB LINE OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|-----------------------|
| <ul style="list-style-type: none"> • OUTPUT SELECT: AFM • Play back the 400 Hz portion of the alignment tape WR5-8CSE. | CH-1 AUDIO OUT connector (terminated with 600Ω) $4.0 \pm 0.3 \text{ dBm}$ | ⚙️ RV351/AU-127 (D-3) |

9-9. E-E LEVEL ADJUSTMENT

Note: The AUDIO LEVEL control should not be touch until rest Section 9 Audio Signal System Alignment.

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|--|
| <ul style="list-style-type: none"> • AUDIO LINE IN: 400 Hz/+4 dBs • AFM INPUT SELECT: CH-1 • OUTPUT SELECT: PCM • AUDIO LIMITER: OFF • Play back the Hi8 ME tape. • STOP mode | CH-1: TP102/AU-127 (G-3) CH-2: TP202/AU-127 (G-2) $\text{CH-1, CH-2} = -12 \pm 0.3 \text{ dBm}$ | CH-1 ⚙️ CH-1 AUDIO LEVEL/ Front Panel CH-2 ⚙️ CH-2 AUDIO LEVEL/ Front Panel |

9-10. E-E PB LINE OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|-------------------------------|
| <ul style="list-style-type: none"> • AUDIO LINE IN: 400 Hz/+4 dBs • OUTPUT SELECT: PCM • E-E mode | CH-1 AUDIO OUT connector (terminated with 600Ω) $4.0 \pm 0.3 \text{ dBm}$ | CH-1 ⚙️ RV401/AU-127 (F-3) |
| | CH-2 AUDIO OUT connector (terminated with 600Ω) $4.0 \pm 0.3 \text{ dBm}$ | CH-2 ⚙️ RV501/AU-127 (F-2) |

9-11. AUDIO LEVEL METER ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|------------------------------|
| <ul style="list-style-type: none"> AUDIO LINE IN: 400 Hz/+4 dBs OUTPUT SELECT: PCM E-E mode | CH-1 AUDIO LEVEL METER $0 \pm 0.5 \text{ dB}$ | CH-1 ⚙ RV601/AU-127 (A-3) |
| | CH-2 AUDIO LEVEL METER $0 \pm 0.5 \text{ dB}$ | CH-2 ⚙ RV701/AU-127 (A-3) |

9-12. MIC INPUT LEVEL ADJUSTMENT (CH-1)

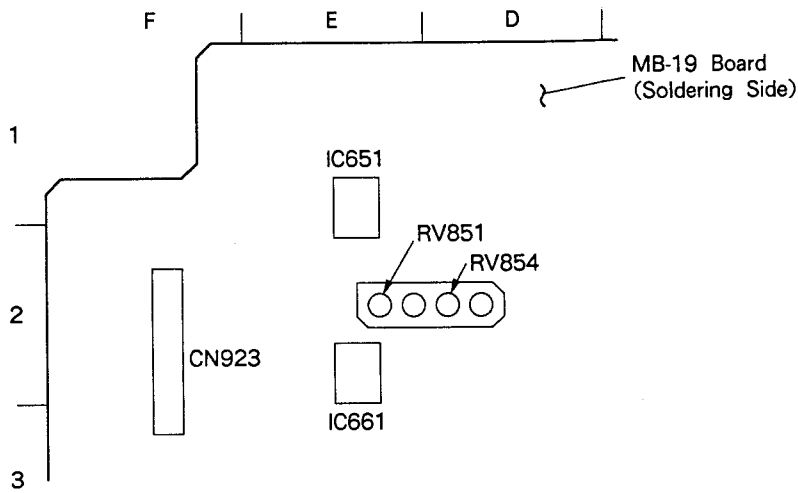
| Machine condition for adjustment | Specifications | Adjustments |
|---|---|----------------------|
| <ul style="list-style-type: none"> OUTPUT SELECT: PCM Play back the Hi8 ME tape. STOP mode | | |
| Step 1 <ul style="list-style-type: none"> MIC IN: 400 Hz/−60 dBs AUDIO LIMITER: OFF | TP102/AU-127 (G-3) $A = -12 \pm 1 \text{ dBm}$ | |
| Step 2 <ul style="list-style-type: none"> MIC IN: 400 Hz/−30 dBs AUDIO LIMITER: ON | TP102/AU-127 (G-3) $(A + 3.5) + 1 \text{ dBm}$ | ⚙ RV101/AU-127 (G-4) |

9-13. MIC INPUT LEVEL ADJUSTMENT (CH-2)

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|----------------------|
| <ul style="list-style-type: none"> OUTPUT SELECT: PCM Play back the Hi8 ME tape. STOP mode | | |
| Step 1 <ul style="list-style-type: none"> MIC IN: 400 Hz/−60 dBs AUDIO LIMITER: OFF | TP202/AU-127 (G-2) $A = -12 \pm 1 \text{ dBm}$ | |
| Step 2 <ul style="list-style-type: none"> MIC IN: 400 Hz/−30 dBs AUDIO LIMITER: ON | TP202/AU-127 (G-2) $(A + 3.5) \pm 1 \text{ dBm}$ | ⚙ RV201/AU-127 (H-2) |

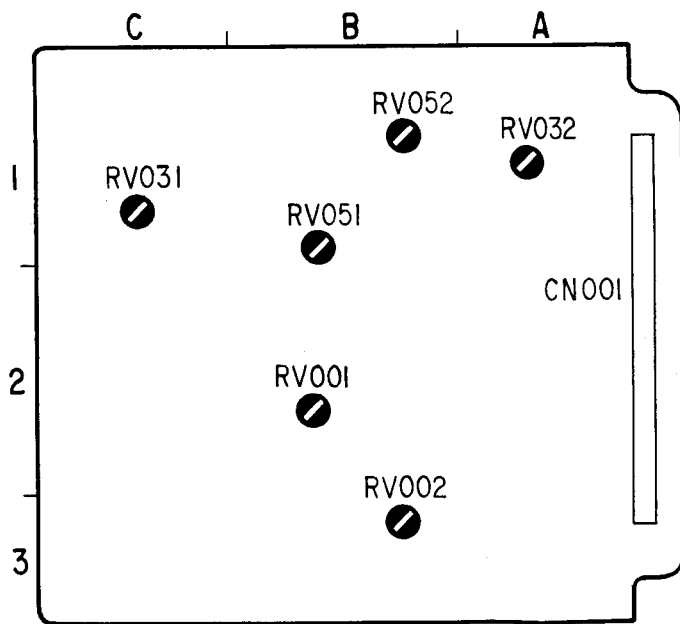
Location of RVs on the PD-19 Board.

Adjust RV851 and RV854 on the PD-19 Board from the soldering side holes of MB-19 Board.



Location of RVs on the PA-27 Board.

Open the MB-19 Board and remove the shield case lid. Adjust RVs from the soldering side holes. (It is unnecessary to remove the PA-27 Board from the mechanical deck.)



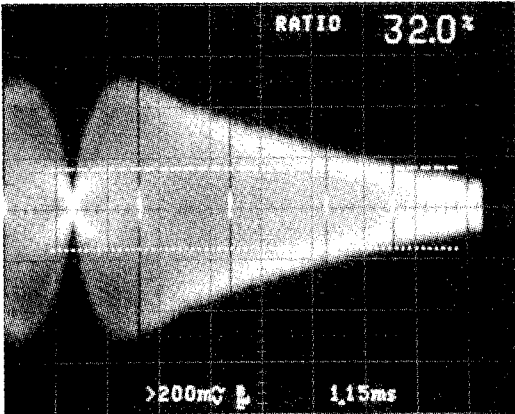
SECTION 10 VIDEO SIGNAL SYSTEM ALIGNMENT

[Equipment Required]

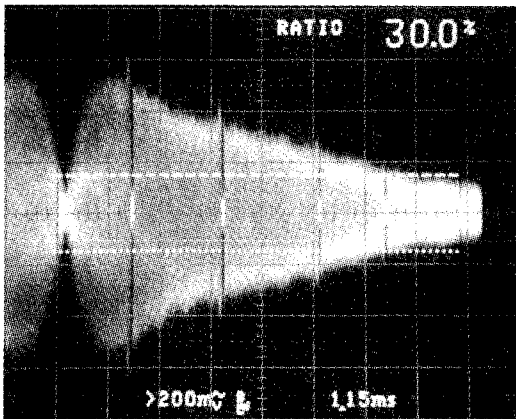
- Oscilloscope
- Frequency counter
- Test signal generator
- Vectorscope
- Vectorscope
- Sweep generator

| Name (Part No.) | REC mode | Tape Type | Tape Speed | Contents | |
|--|----------|-----------|------------|---|---|
| | | | | Video Area | PCM Area |
| Video freq. resp. WR5-7CE (8-967-995-18) | Hi8 | ME | SP | RF sweep 0 to 15 MHz Marker: 2.0 MHz 4.5 MHz 7.0 MHz 8.5 MHz 10.0 MHz | |
| SP operation check WR5-5CSP (8-967-995-47) | STD | MP | SP | VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod. | AUDIO SIGNAL (PCM) Monoscope Section 20 Hz 20 sec. 400 Hz 20 sec. 14 kHz 20 sec. Color-Bar Section 1 kHz 4 min. |
| SP operation check WR5-8CSE (8-967-995-48) | Hi8 | ME | SP | | AUDIO SIGNAL (PCM) 400 Hz 20 min. |
| LP operation check WR5-8CLE (8-967-995-57) | Hi8 | ME | LP | VIDEO SIGNAL Color-bar 4 min. Monoscope 4 min. AUDIO SIGNAL (AFM) 400 Hz 60% mod. | AUDIO SIGNAL (PCM) 400 Hz 40 min. |

10-1. SP PB FREQUENCY RESPONSE ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|---|
| <ul style="list-style-type: none"> • Play back the alignment tape WR5-7CE. | TP031/FR-43 (C-2)  $8.5 \text{ MHz} = 32 \pm 4\%$ (in reference to 2 MHz) | CH-1 adjust ⚙ RV004/RP-103 Trigger: TP061/FR-43 (B-2) L level: CH-1 |
| | TP031/FR-43 (C-2) $8.5 \text{ MHz} = 32 \pm 4\%$ (in reference to 2 MHz) | CH-2 adjust ⚙ RV003/RP-103 Trigger: TP061/FR-43 (B-2) H level: CH-2 |

10-2. LP PB FREQUENCY RESPONSE ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---|
| <ul style="list-style-type: none"> • Connect TP104/SE-10P (D-4) to ground with jumper wire. • Play back the alignment tape WR5-7CE. • After adjustment, remove a jumper wire. | TP031/FR-43 (C-2)  $8.5 \text{ MHz} = 30 \pm 4\%$ (in reference to 2 MHz) | CH-1 adjust ⚙ RV004/RP-73 (LP) Trigger: TP061/FR-43 (B-2) L level: CH-1 |
| | TP031/FR-43 (C-2) $8.5 \text{ MHz} = 30 \pm 4\%$ (in reference to 2 MHz) | ⚙ RV003/RP-73 (LP) Trigger: TP061/FR-43 (B-2) H level: CH-2 |

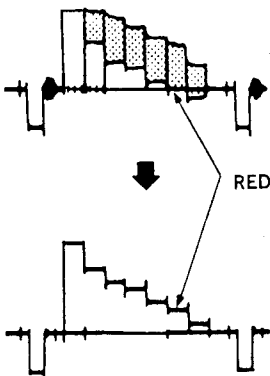
10-3. FLYING ERASE CONFIRMATION

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|-------------|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • Use a Hi8 ME tape. • REC mode | TP041/FR-43 (C-1) 8.0 ± 0.5 MHz | |

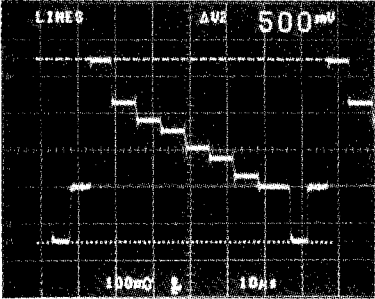
10-4. SUBCARRIER FREQUENCY ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|---------------------|
| <ul style="list-style-type: none"> • DIGITAL CNR SW: AUTO • VIDEO IN: no signal • PB mode | CN914-7/HK-5 (H-3) 4433618 ± 5 Hz | ⚙️ CV601/HK-5 (B-4) |

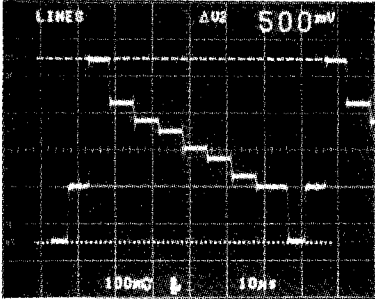
10-5. PB C COMB FILTER ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|--|
| <ul style="list-style-type: none"> • Supply the composite color-bar signal (Y=0.5 Vp-p, burst=0.15 Vp-p) to CN911-4/HK-5 (H-2). • E-E mode | IC501-26/HK-5 (B-3)  Minimize residual chroma component at RED portion (30 mVp-p or less) | ⚙️ RV502/HK-5 (B-2) ⚙️ LV501/HK-5 (D-3) |

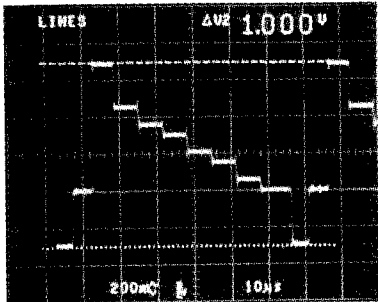
10-6. SYNC AGC ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|-----------------------------|
| <ul style="list-style-type: none">• VIDEO IN: color-bar signal• E-E mode | <div>TP402/HK-5 (D-1)</div> <div></div> <div>0.50±0.02 V</div> | <div>RV302/HK-5 (E-1)</div> |

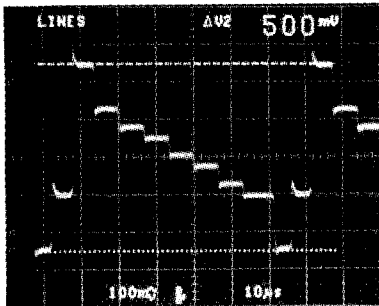
10-7. AGC OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|-----------------------------|
| <ul style="list-style-type: none">• VIDEO IN: color-bar signal• E-E mode | <div>TP301/HK-5 (D-3)</div> <div></div> <div>0.50±0.02 V</div> | <div>RV405/HK-5 (C-1)</div> |

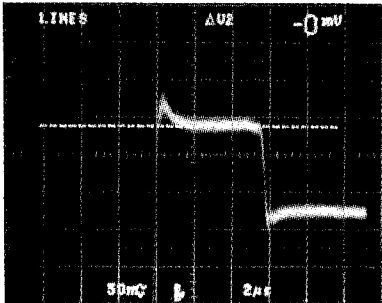
10-8. E-E Y OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|--------------------|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • E-E mode | TP303/HK-5 (E-1)  $1.00 \pm 0.05 \text{ V}$ | ● RV301/HK-5 (E-1) |

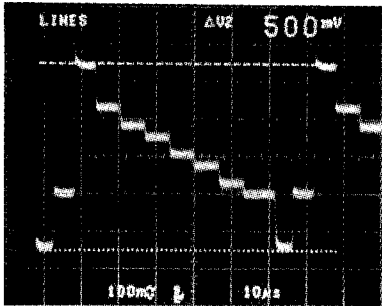
10-9. STD MODE PB Y LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|--------------------|
| <ul style="list-style-type: none"> • Play back the color-bar signal portion of the alignment tape WR5-5CSP. | TP302/HK-5 (D-3)  $0.50 \pm 0.02 \text{ V}$ | ● RV304/HK-5 (E-3) |

10-10. PB DE-EMPHASIS ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|--------------------|
| <ul style="list-style-type: none"> Play back the color-bar signal portion of the alignment tape WR5-5CSP. | TP302/HK-5 (D-3)  100% white level=makes flat | ⚙ RV304/HK-5 (D-2) |

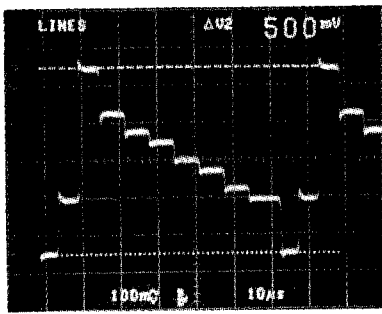
10-11. Hi8 MODE PB Y LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|--------------------|
| <ul style="list-style-type: none"> Play back the color-bar signal portion of the alignment tape WR5-8CSE. | TP302/HK-5 (D-3)  $0.50 \pm 0.02 \text{ V}$ | ⚙ RV305/HK-5 (E-3) |

10-12. STD MODE Y FM CARRIER ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|--|--------------------|
| <ul style="list-style-type: none"> VIDEO IN: no signal Use a P5-MP series tape. E-E mode | IC401-14/HK-5 (D-2) $4.37 \pm 0.02 \text{ MHz}$ | ⚙ RV402/HK-5 (D-2) |

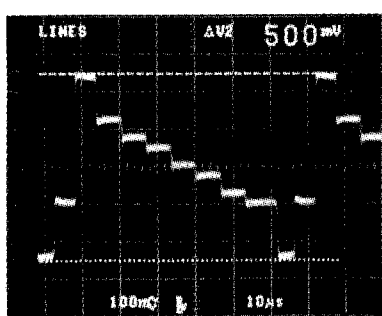
10-13. STD MODE Y FM DEVIATION ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|--|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • Perform the self-recording/play back with a P5-MP series tape. | <p>TP302/HK-5 (D-3)</p>  <p>$0.50 \pm 0.02 \text{ V}$</p> <ul style="list-style-type: none"> • Repeat recording and play back several times until the level meets the specification. Adjust the RV403 during recording. | <p>① RV403/HK-5 (E-2)</p> <p>When turning in the clockwise direction, the level decreases.</p> |

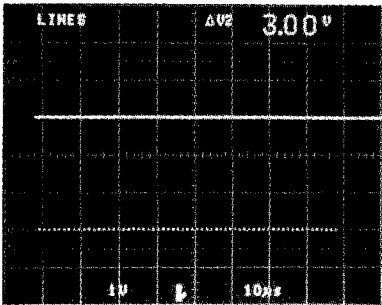
10-14. Hi8 MODE Y FM CARRIER ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---------------------------|
| <ul style="list-style-type: none"> • VIDEO IN: no signal • Use a Hi8 ME series tape. • E-E mode | <p>TP401/HK-5 (D-3)</p> <p>$5.95 \pm 0.02 \text{ MHz}$</p> | <p>① RV401/HK-5 (D-2)</p> |


10-15. Hi8 MODE Y FM DEVIATION ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|--|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • Perform the self-recording/play back with a Hi8 ME tape. | <p>TP302/HK-5 (D-3)</p>  <p>$0.50 \pm 0.02 \text{ V}$</p> <ul style="list-style-type: none"> • Repeat recording and play back several times until the level meets the specification. Adjust RV404 during recording. | <p>① RV404/HK-5 (D-2)</p> <p>When turning in the clockwise direction, the level decreases.</p> |

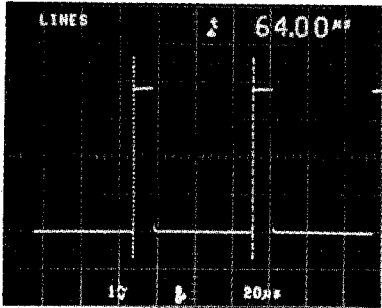
10-16. 375f_H VCO ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---------------------|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • E-E mode | IC602-26/HK-5 (B-4)  $3.0 \pm 0.05 \text{Vdc}$ | ⚙️ RV601/HK-5 (A-4) |

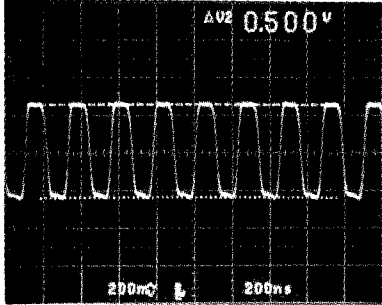
10-17. CHROMA EMPHASIS f₀ ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|--------------------|
| <ul style="list-style-type: none"> • Connect pin 47 of IC602 to TP904/HK-5 (F-5) via 10 k ohm resistor. • Connect pin 47 of IC602 to ground via 10 k ohm resistor. • VIDEO IN: color-bar signal • E-E mode • After adjustment, remove the resistor. | IC601-11/HK-5 (A-5)  C (chroma component) = minimum | ⚙️ T602/HK-5 (B-6) |

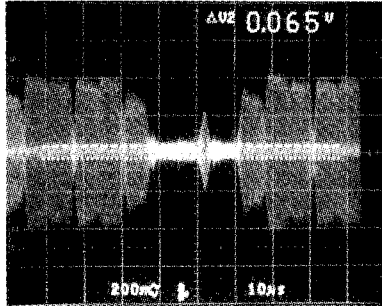
10-18. f_H VCO ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|---------------------|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • E-E mode | IC801-15/HK-5 (A-3)  $15625 \pm 10 \text{Hz}$ | ⚙️ RV802/HK-5 (A-3) |

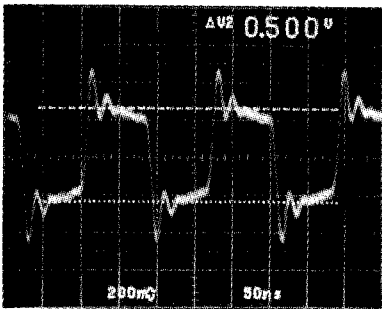
10-19. GAIN CONTROL AMP ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|-------------------------|
| <ul style="list-style-type: none"> • Play back the color-bar signal portion of the alignment tape WR5-8CSE. | <p>IC801-22/HK-5 (A-3)</p>  <p>500±25mV</p> | <p>RV801/HK-5 (A-3)</p> |

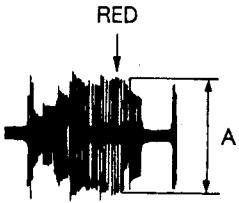
10-20. CARRIER BALANCE ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|-------------------------|
| <ul style="list-style-type: none"> • Play back the color-bar signal portion of the alignment tape WR5-8CSE. | <p>TP602/HK-5 (A-5)</p>  <p>3.7MHz or 5.17MHz component=minimum</p> | <p>RV602/HK-5 (A-5)</p> |

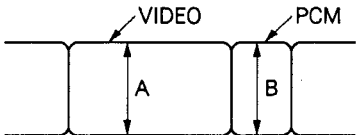
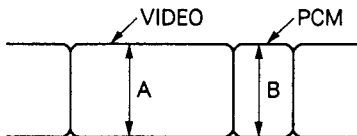
10-21. REC Y RF LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|------------------|
| <ul style="list-style-type: none"> • VIDEO IN: no signal • Use a Hi8 ME tape • E-E mode | TP201/HK-5 (F-5)  $0.5 \pm 0.02 \text{ V}$ | RV202/HK-5 (F-5) |

10-22. REC C RF LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|------------------|
| <ul style="list-style-type: none"> • Perform following connections. Q211-emitter (F-5) ↔ TP904/HK-5 (F-5). • Q608-emitter (B-6) → ground • Remove the C216 (E-5). • VIDEO IN: color-bar signal • E-E mode • After adjustment, remove the jumper wires and solder chip capacitor to C216. | TP201/HK-5 (D-6)  $A = 100 \pm 10 \text{ mV}$ | RV201/HK-5 (E-5) |

10-23. SP REC CURRENT ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|---|
| <ul style="list-style-type: none"> • VIDEO IN: 50% white signal • Use a Hi8 ME tape • REC mode | TP001/FR-43 (A-1)  A (VIDEO) = 200 ± 10 mV | VIDEO CH-1 ●RV002/FR-43 (C-2) Trigger: TP061/FR-43 (B-2) |
| | TP002/FR-43 (C-1)  A (VIDEO) = 200 ± 10 mV B (PCM) = 200 ± 10 mV | VIDEO CH-2 ●RV001/FR-43 (B-2) PCM ●RV002/RP-103 Trigger: TP061/FR-43 (B-2) |

Note: LP REC CURRENT ADJUSTMENT (RV001, RV002) is unnecessary.

10-24. DOC LEVEL ADJUSTMENT

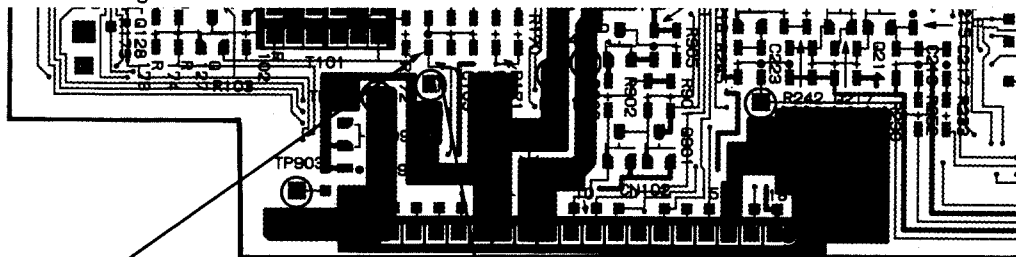
Step 1.

Note: Remove C103 on the HK-5 Board (G-5) for this adjustment. Use the sweep generator and put the marker in the 5 MHz portion. Adjust the level of marker to the level described below steps with variable volume of the sweep generator. After adjustment, solder the chip capacitor (0.047 μ F) to C103 on the HK-5 Board (G-5).

Be sure to use the new capacitor. (1-163-035-00)

Connect the output of sweep generator to the point of HK-5 Board after removing C103 as described below.

HK-5 soldering side



Connect the sweep generator at this point

C103

| Machine condition for adjustment | Specifications | Adjustments |
|--|----------------------------|-------------------------|
| <ul style="list-style-type: none"> Play back the alignment tape WR5-7CE. Adjust the marker level of the sweep generator to meet the specification. | <p>IC501-17/HK-5 (C-2)</p> | <p>RV101/HK-5 (H-4)</p> |

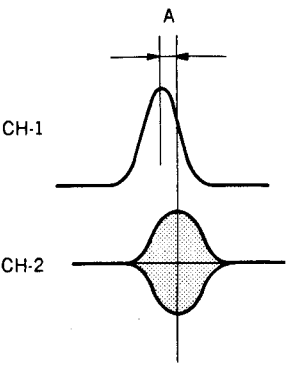
• After adjustment, remove the sweep generator and solder chip capacitor to C103.

Step 2.

Use the oscilloscope in this adjustment.

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|-------------------------|
| <ul style="list-style-type: none"> Supply the composite color-bar signal (Y=0.5 Vp-p, Burst= 0.15 Vp-p, chroma OFF) to CN911-4 pin on the HK-5 Board (H-2). | <p>TP501/HK-5 (C-2)</p> <p>A=0\pm150 mVp-p</p> | <p>RV501/HK-5 (B-2)</p> |

10-25. Y/C DELAY ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|-------------------------|
| <ul style="list-style-type: none"> • VIDEO IN: pulse & bar signal • E-E mode | <p>CH-1 : TP303/HK-5 (E-1) CH-2 : TP801/HK-5 (A-1)</p>  <p>Minimize the A</p> | <p>RV700/HK-5 (H-5)</p> |

10-26. CARRIER-LEAK CANCEL ADJUSTMENT (1)

10-26-1. External Sync AFC Adjustment

| Machine condition for adjustment | Specifications | Adjustments |
|---|--|---------------------|
| <ul style="list-style-type: none"> • SYNC IN: color-bar signal • E-E mode | TP731/DI-13 (F-2) $2.5 \pm 0.1 \text{ Vdc}$ | ⚙️ CV11/DI-13 (F-3) |
| | TP732/DI-13 (E-6) $2.5 \pm 0.1 \text{ Vdc}$ | ⚙️ CV21/DI-13 (E-6) |
| | TP801/DI-12 (A-2) $2.5 \pm 0.1 \text{ Vdc}$ | ⚙️ CV31/DI-12 (A-3) |

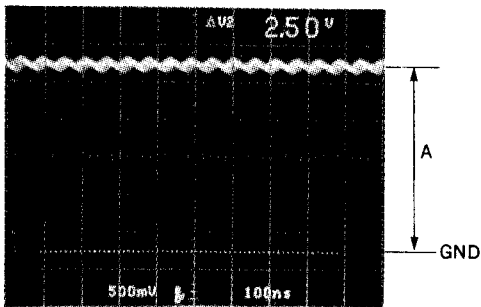
10-26-2. Sync Generator Clock Adjustment

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|----------------------|
| <ul style="list-style-type: none"> • SYNC IN: no signal • E-E mode | TP760/DI-13 (E-5) $17734475 \pm 50 \text{ Hz}$ | ⚙️ RV750/DI-13 (D-4) |

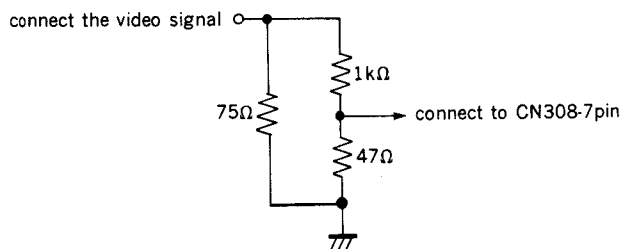
10-26-3. AFC Adjustment

| Machine condition for adjustment | Specifications | Adjustments |
|---|--|----------------------|
| <ul style="list-style-type: none"> • VIDEO IN: no signal • E-E mode | TP203/DI-12 (H-2) $14218.75 \pm 50 \text{ kHz}$ | ⚙️ CV301/DI-12 (H-1) |

10-26-4. APC Adjustment

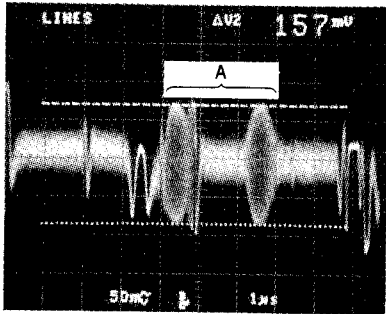
| Machine condition for adjustment | Specifications | Adjustments |
|--|--|----------------------|
| <ul style="list-style-type: none"> • Play back the color-bar signal portion of the alignment tape WR5-8CSE. | TP205/DI-12 (H-4)  $A = 2.5 \pm 0.3 \text{ Vdc}$ | ⚙️ CV302/DI-12 (J-4) |

10-27. CARRIER-LEAK CANCEL ADJUSTMENT(2)

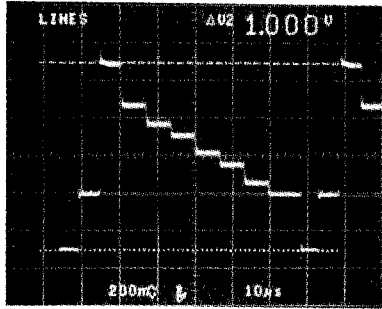


| Machine condition for adjustment | Specifications | Adjustments |
|--|---|--|
| <ul style="list-style-type: none"> • Disconnect CN308 of VO-30 Board (H-5). • Solder a resistor to the pattern of CN308-7 pin as described above. • Connect the pulse & bar signal to 1 k ohm resistor. • E-E mode | <p>TP1/VO-30 (L-4)</p> <p>A (burst portion)=minimum</p> | <p>RV1/VO-30 (K-5)</p> |
| <ul style="list-style-type: none"> • Disconnect CN308 of VO-30 Board (H-5). • Solder a resistor to the pattern of CN308-7 pin as described above. • Connect the color-bar signal to 1 k ohm resistor. • E-E mode • After adjustment, remove the resistor and connect CN308. | <p>TP4/VO-30 (J-2)</p> <p>A (chroma)=minimum (minimize the all chroma components)</p> | <p>RV2/VO-30 (J-4) RV3/VO-30 (J-3)</p> |

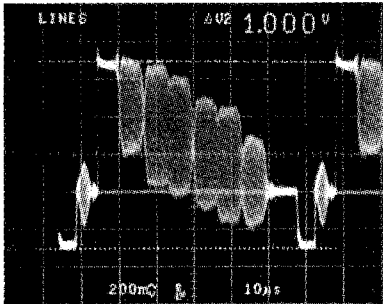
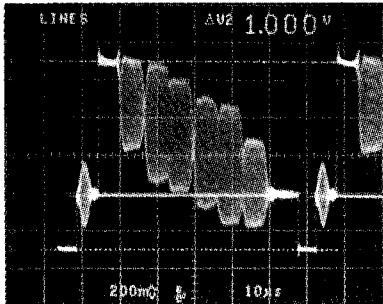
10-28. NOISE CANCEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|--------------------|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • Connect TP2 (L-4) and E1 (L-4) on the VO-30 board with jumper wire. • E-E mode • After adjustment, remove jumper wire. | CH-1: TP51/VO-30 (H-2) CH-2: TP52/VO-30 (J-1) (Level of TP51)×2=level of TP52 | Ⓐ RV51/VO-30 (J-1) |
| | TP53/VO-30 (J-2)  A (burst portion)=minimum | Ⓐ RV52/VO-30 (K-1) |

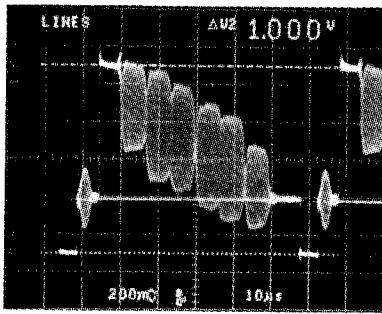
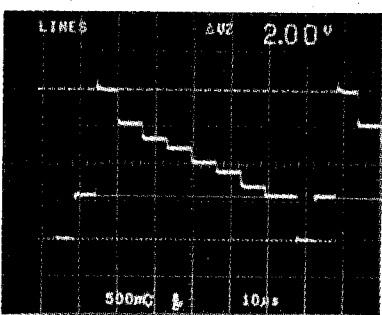
10-29. Y A/D OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---------------------|
| <ul style="list-style-type: none"> • Play back the color bar signal portion of the alignment tape WR5-8CSE. | TP651/DI-13 (B-7)  1.0±0.1 V | Ⓐ RV201/DI-13 (G-5) |

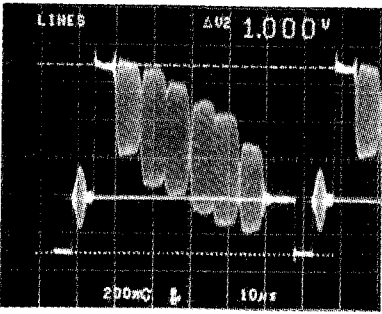
10-30. CNR MODE LINE OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|---------------------|
| <ul style="list-style-type: none"> • VIDEO OUT: terminating with 75 ohm • Play back the color-bar signal portion of the alignment tape WR5-8CSE. | | |
| Step 1 • DIGITAL CNR SW (sub panel): BYPASS | TP5/VO-30 (M-4)  Check the waveform is as shown in the figure. Value of this time is A. | |
| Step 2 • DIGITAL CNR SW (sub panel): AUTO | TP5/VO-30 (M-4)  $B = A \pm 0.01 \text{ Vp-p}$ | ⚙ RV651/DI-13 (B-3) |

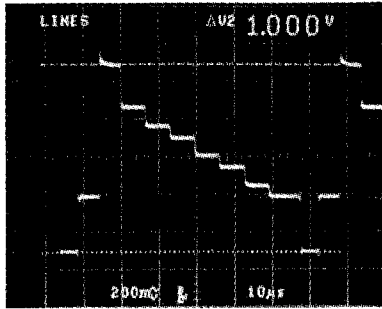
10-31. LINE OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---------------------|
| <ul style="list-style-type: none"> • VIDEO OUT: terminating with 75 ohm • Play back the color-bar signal portion of the alignment tape WR5-8CSE. | VIDEO OUT connector  $1.00 \pm 0.05 \text{ V}$ | Ⓐ RV4/VO-30 (L-3) |
| | TP301/VO-30 (H-2)  $2.0 \pm 0.1 \text{ V}$ | Ⓐ RV302/VO-30 (G-1) |

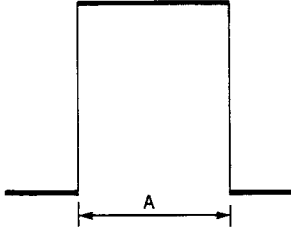
10-32. MONITOR OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|--|---------------------|
| <ul style="list-style-type: none"> • Terminate the MONITOR OUT connector with 75 ohm terminator. • Play back the color-bar signal portion of the alignment tape WR5-8CSE. | TP101/VO-30 (M-3)  $1.00 \pm 0.05 \text{ Vp-p}$ | Ⓐ RV101/VO-30 (H-4) |

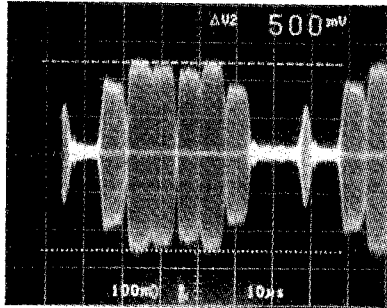
10-33. DUB Y OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|--|---------------------|
| <ul style="list-style-type: none"> • Play back the color-bar signal portion of the alignment tape WR5-8CSE. • DUB OUT SW: HIGH/SP | TP202/VO-30 (H-5)  $1.0 \pm 0.1 \text{ V}$ | ⑦ RV201/VO-30 (H-4) |

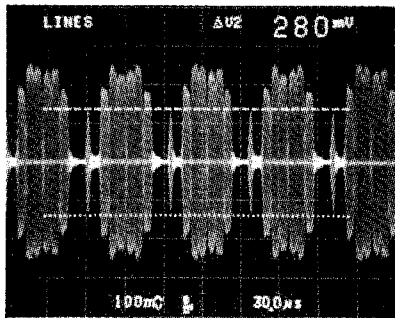
10-34. HIGH SPEED ACC GATE WIDTH ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|---------------------|
| <ul style="list-style-type: none"> • VIDEO IN: pulse & bar signal • E-E mode | TP403/VO-30 (A-3)  $A = 2.1 \pm 0.2 \mu\text{sec}$ (Adjust at the jitter center) | ⑦ RV400/VO-30 (A-1) |

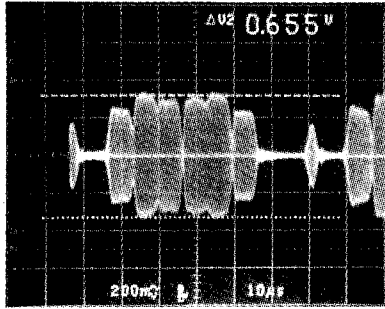
10-35. HIGH SPEED ACC LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|--|---|
| <ul style="list-style-type: none"> DIGITAL CNR SW (sub panel) : BYPASS Play back the color-bar signal portion of the alignment tape WR5-8CSE. | TP406/VO-30 (C-3)  $0.5 \pm 0.05 \text{ V}$ | ⚙️ RV403/VO-30 (B-4) Trigger: TP5/VO-30 (M-4) |

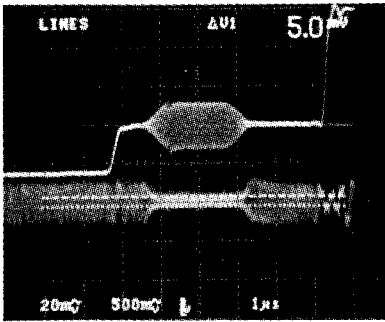
10-36. CHROMA A/D INPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---|
| <ul style="list-style-type: none"> Play back the color bar signal portion of the alignment tape WR5-8CSE. | TP652/DI-13 (A-7)  $A = 0.286 \pm 0.01 \text{ V}_{p-p}$ PB burst level = Replacement burst level ($\pm 0.01 \text{ V}$) | ⚙️ RV202/DI-13 (H-5) Trigger: TP651/DI-13 (B-7) |

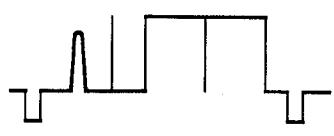
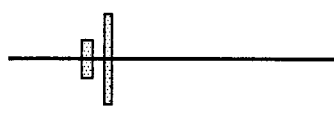
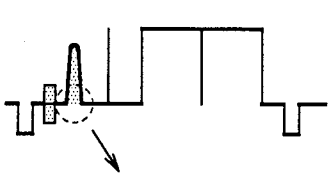
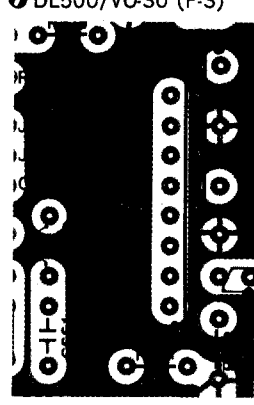
10-37. CNR MODE CHROMA OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|-------------------|
| <ul style="list-style-type: none"> • Paly back the color-bar signal portion of the alignment tape WR5-8CSE. | | |
| Step 1 <ul style="list-style-type: none"> • DIGITAL CNR SW: BYPASS | TP408/VO-30 (A-3) Value of this time is A. | |
| Step 2 <ul style="list-style-type: none"> • DIGITAL CNR SW: AUTO | TP408/VO-30 (A-3)  $A \pm 0.05 \text{ V}$ | RV652/DI-13 (A-3) |

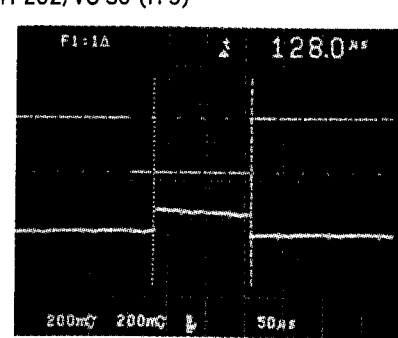
10-38. CHROMA NOISE CANCEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • E-E mode | TP407/VO-30 (C-3)  burst portion=less than 10 mVp-p | RV404/VO-30 (C-3) Trigger: TP5/VO-30 (M-4) |

10-39. DUB Y/C DELAY ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|--|
| <ul style="list-style-type: none"> • VIDEO IN: MOD 10T pulse signal • E-E mode • DUB OUT (U-matic) SW: LOW | <p>CH-1: TP202/VO-30 (H-5) CH-2: TP501/VO-30 (D-5)</p> <p>TP202</p>  <p>TP501</p>  <p>ADD mode</p>  <p>NG OK NG (Chroma signal advanced) (Chroma signal delay)</p> | <p>DL500/VO-30 (F-3)</p>  <p>Set the waveform to OK position. Move the DL500 in the direction that chroma delays two taps, and solder it.</p> <p>Trigger: TP5/VO-30 (M-4)</p> |

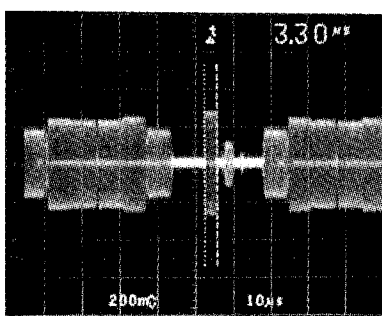
10-40. 1st FIELD PULSE WIDTH ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|--------------------------|
| <ul style="list-style-type: none"> • Play back the color-bar signal portion of the alignment tape WR5-8CSE. | <p>CH-1: TP602/VO-30 (A-2) CH-2: TP202/VO-30 (H-5)</p>  <p>128±30μsec</p> | <p>RV405/VO-30 (A-2)</p> |

10-41. LOCAL OSCILLATOR FREQUENCY ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---------------------|
| <ul style="list-style-type: none"> DUB OUT (U-matic) sw: LOW VIDEO IN: no signal E-E mode | TP502/VO-30 (E-3) $5119165 \pm 5\text{Hz}$ | ① CV500/VO-30 (E-1) |
| <ul style="list-style-type: none"> DUB OUT (U-matic) sw: HIGH/SP VIDEO IN: no signal E-E mode | TP502/VO-30 (E-3) $5357447 \pm 5\text{Hz}$ | ① CV650/VO-30 (E-2) |

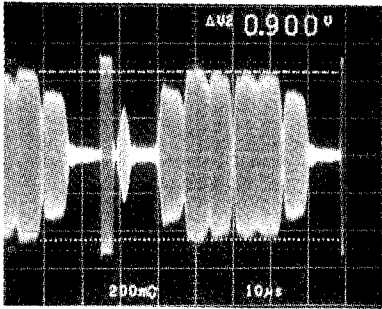
10-42. PILOT BURST ADJUSTMENT (1)

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|---------------------|
| <ul style="list-style-type: none"> VIDEO IN: color-bar signal SYNC IN: black burst signal E-E mode Turn the GAIN knob of the vectorscope and adjust red beam spot to be in the center of "田" mark. | STEP 1. TP501/VO-30 (D-5) Put the pilot burst to the circle of vectorscope. | ① RV601/VO-30 (D-2) |
| | STEP 2. TP501/VO-30 (D-5)  $3.3 \pm 0.1 \mu\text{sec}$ | ① RV600/VO-30 (C-3) |
| | STEP 3. TP501/VO-30 (D-5) Put the pilot burst to the U axis of vectorscope. (within $\pm 1^\circ$) | ① LV600/VO-30 (D-1) |

10-43. PILOT BURST ADJUSTMENT (2)

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---|
| <ul style="list-style-type: none"> Play back the color-bar signal portion of the alignment tape WR5-8CSE. | <p>TP501/VO-30 (D-5)</p> <p>Put the pilot burst to the circle of vectorscope and align with U axis. (within $\pm 3^\circ$)</p> | <ul style="list-style-type: none"> RV602/VO-30 (D-5) |

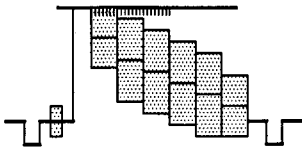
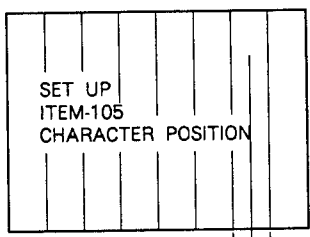
10-44. DUB CHROMA OUTPUT LEVEL ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|---|---|
| <ul style="list-style-type: none"> Play back the color-bar signal portion of the alignment tape WR5-8CSE. | <p>TP503/VO-30 (F-5)</p>  <p>0.90 \pm 0.05 V</p> | <ul style="list-style-type: none"> RV501/VO-30 (E-4) <p>Trigger: TP5/VO-30 (M-4)</p> |

10-45. Y/C MIX ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|--|--|---|
| <ul style="list-style-type: none"> Play back the color-bar signal portion of the alignment tape WR5-8CSE. | <p>VIDEO OUT connector</p> <ul style="list-style-type: none"> Adjust RV5 so that RED beam component should be in the center of 田 portion. | <ul style="list-style-type: none"> RV5/VO-30 (L-4) |

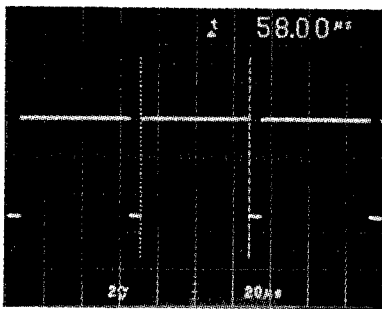
10-46. CHARACTER MIX ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|--|---|
| <ul style="list-style-type: none"> • VIDEO IN: full color-bar signal • E-E mode • Set the COUNTER/TC/DIAL MENU SW to DIAL MENU. • Connect the monitor to MONITOR OUT connector. • After adjustment, set the COUNTER/TC/DIAL MENU SW to center. | TP101/VO-30 (M-3) <ul style="list-style-type: none"> • While pressing the MENU key, turn the Search Dial and set the counter value for "105". • Match the white level and the character level.  | <ul style="list-style-type: none"> • RV100/VO-30 (L-1) |
| | DISPLAY  <p>Adjust CV100 so that the right edge of the character N is positioned in the center (A=B) of blue area.</p> | <ul style="list-style-type: none"> • CV100/SY-145A (J-5) |

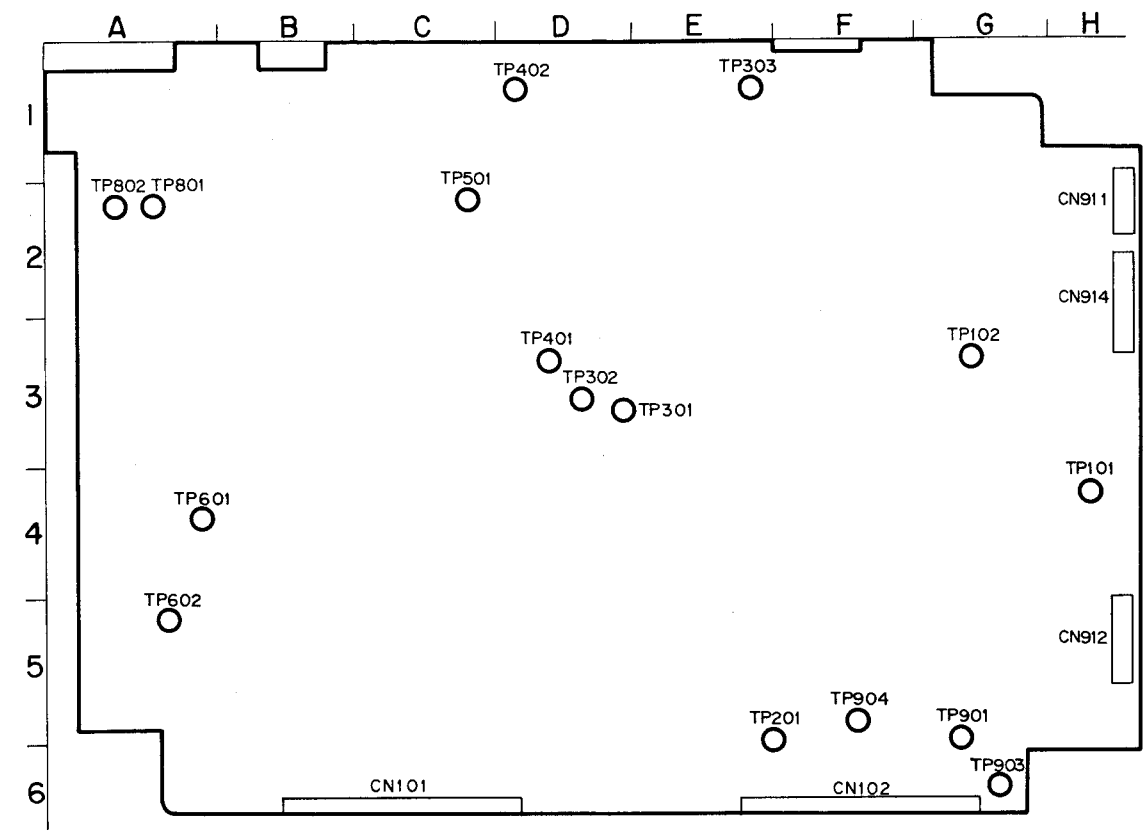
10-47. SLOW TRACKING ADJUSTMENT

| Machine condition for adjustment | Specifications | Adjustments |
|---|---|---|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • Perform the self-recording/play back about 20 sec. with a Hi8 ME tape. • Set the Slow Adjust Volume of Sub Panel to the center click position. • Connect the counter to TP1/DI-12 (B-6). • Put the unit into the SHUTTLE mode and turn the Search Dial in the FWD direction so that the frequency is 192 Hz. Play back the recorded portion. (It corresponds to one-fifth time speed.) | Minimize the noise on the monitor screen. | <ul style="list-style-type: none"> • RV1/SY-145A (C-1) |

10-48. CHARACTER DISPLAY RANGE ADJUSTMENT

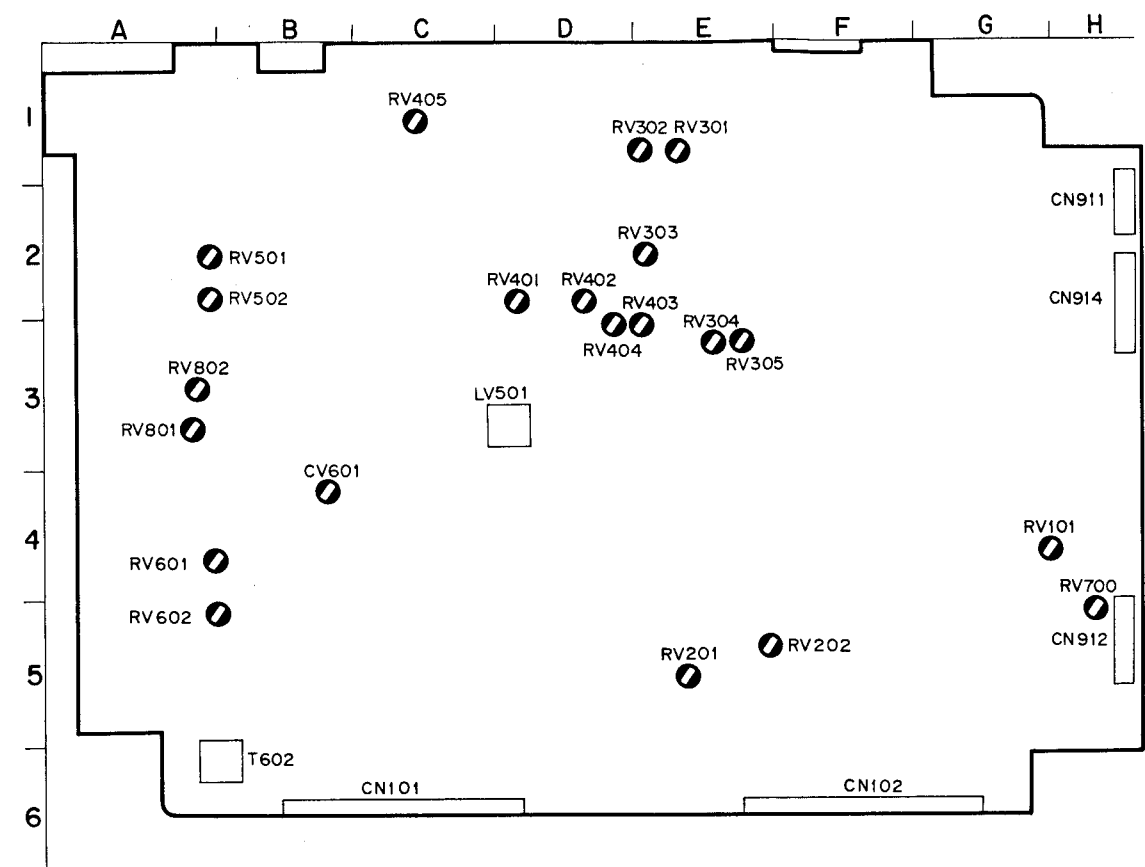
| Machine condition for adjustment | Specifications | Adjustments |
|--|---|-------------------|
| <ul style="list-style-type: none"> • VIDEO IN: color-bar signal • E-E mode | TP101/SY-145A (I-5)  58±1 μS | RV2/SY-145A (E-5) |

Location of TPs on the HK-5 Board.



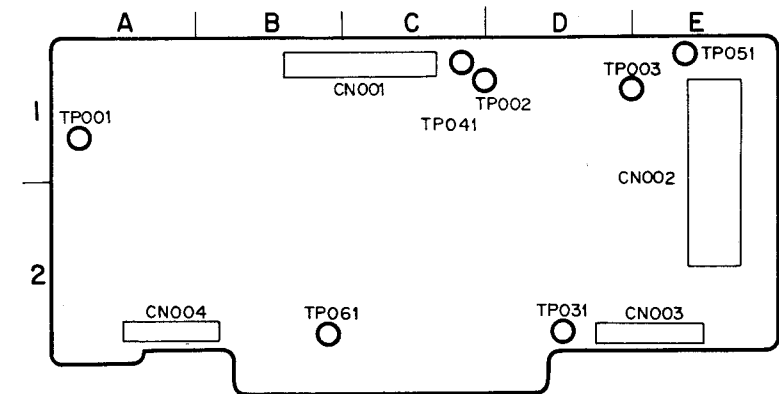
Place the unit on its right side down. Remove the Bottom Plate and Core Shield Plate. Open the HK-5 Board.

Locations of RVs, CVs, LVs and T on the HK-5 Board.



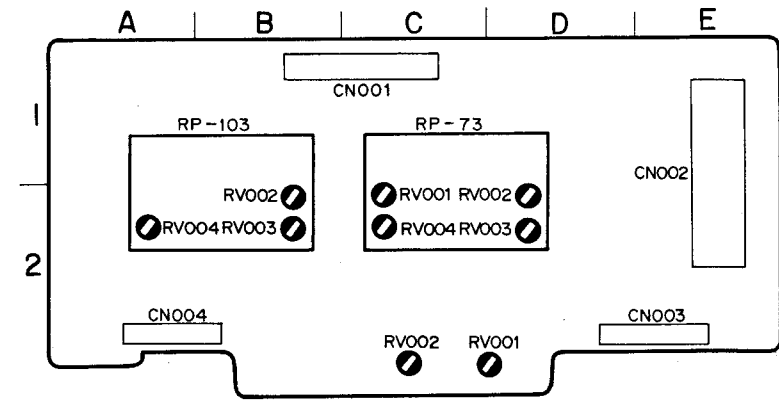
Place the unit on its right side down. Remove the Bottom Plate and Core Shild Plate. Open the HK-5 Board.

Location of TPs on the FR-43 Board.



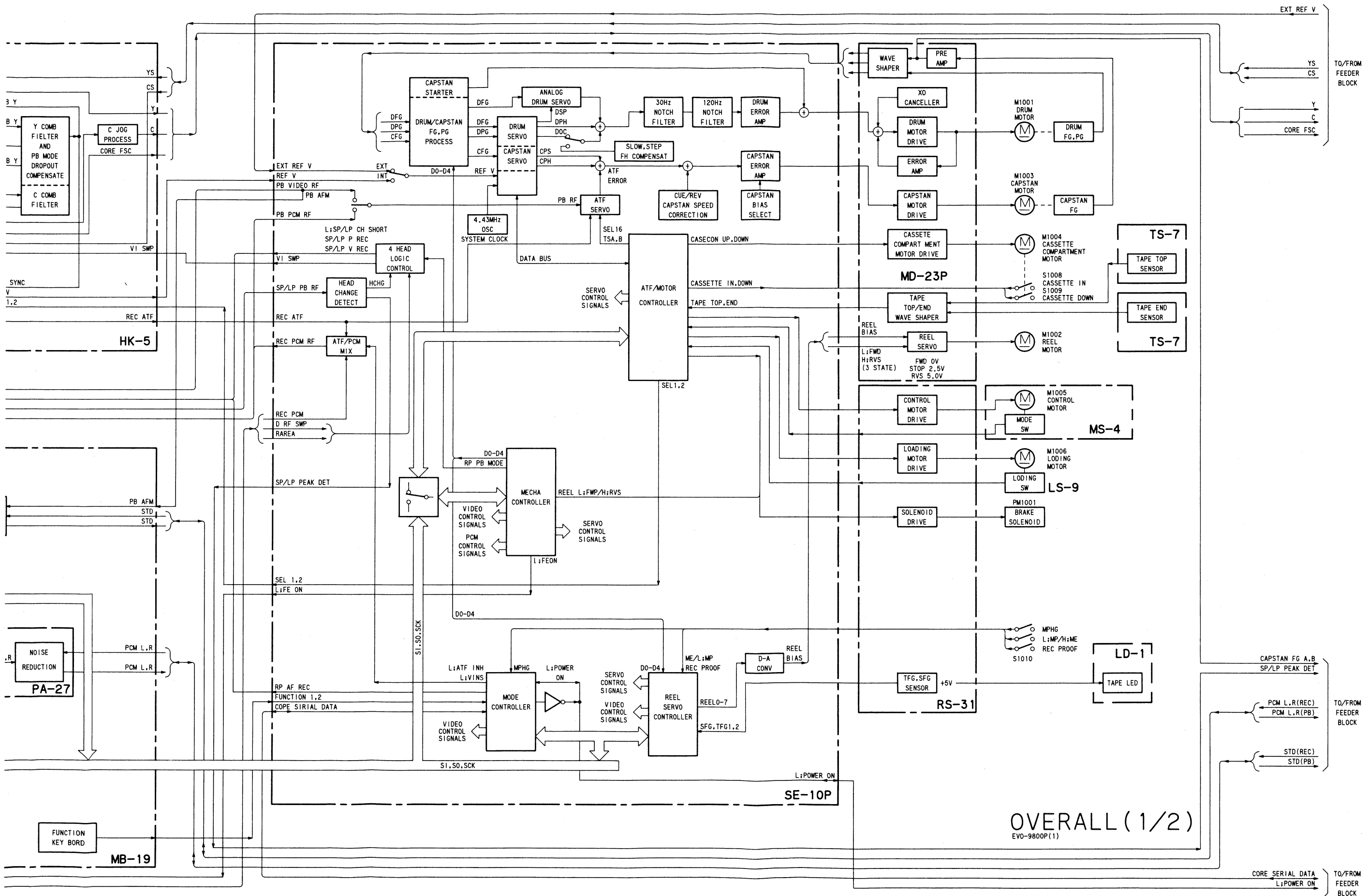
Remove the Top Plate and Open the MB-19 Board.

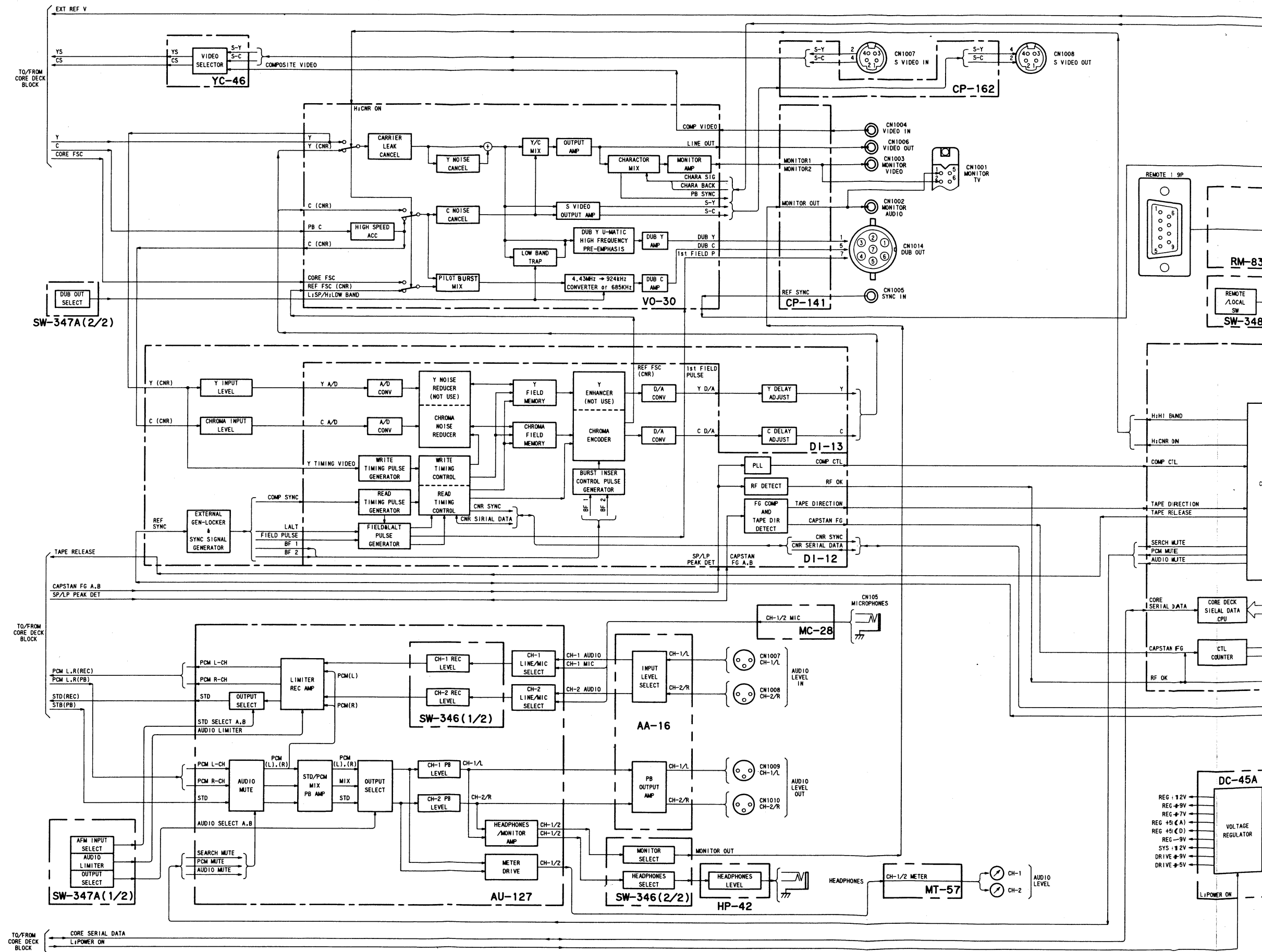
Location of RVs on the FR-43 and RP-73, RP-103 Boards.

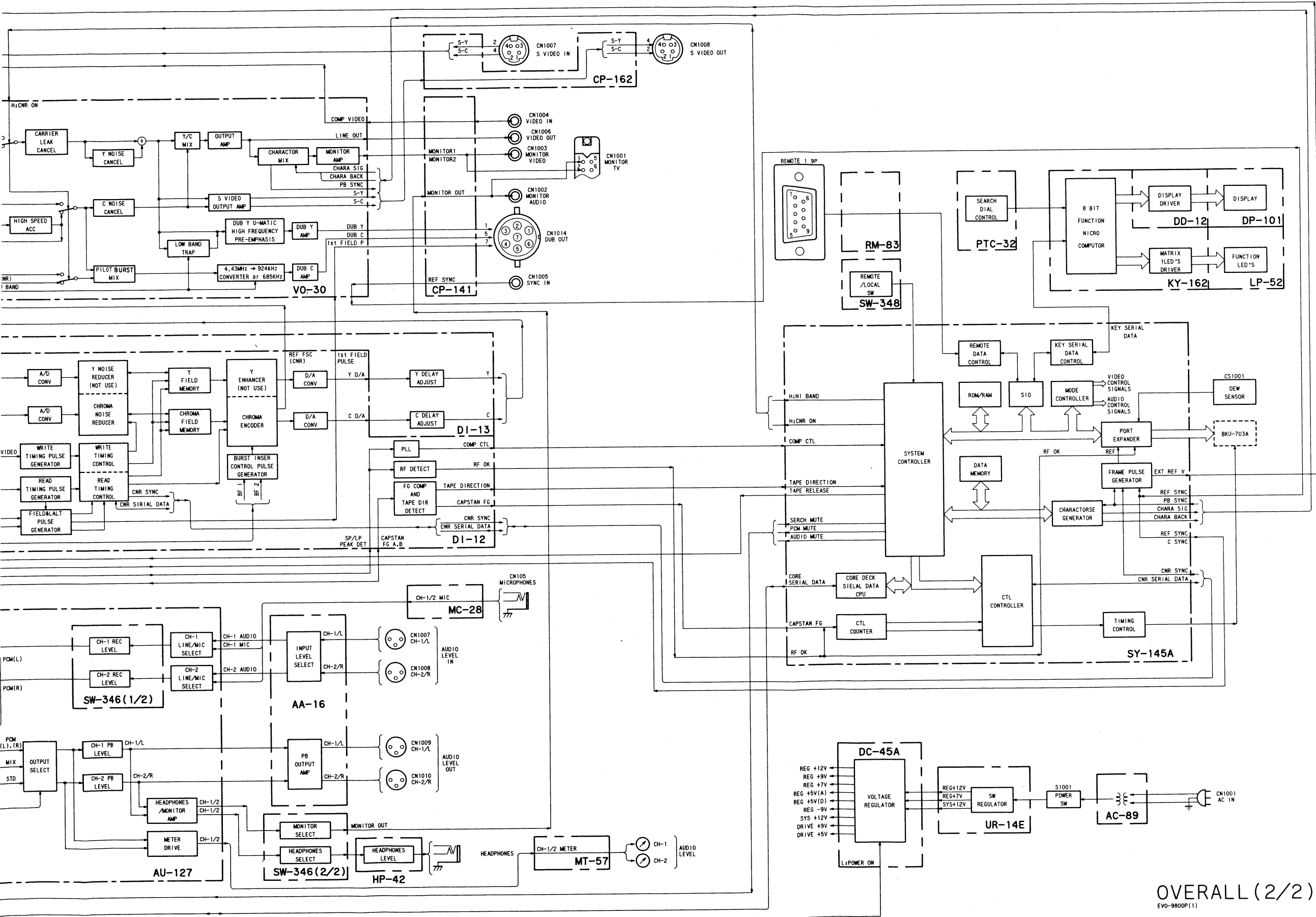


Remove the Top Plate and Open the MB-19 Board.

SECTION 11
BLOCK DIAGRAM

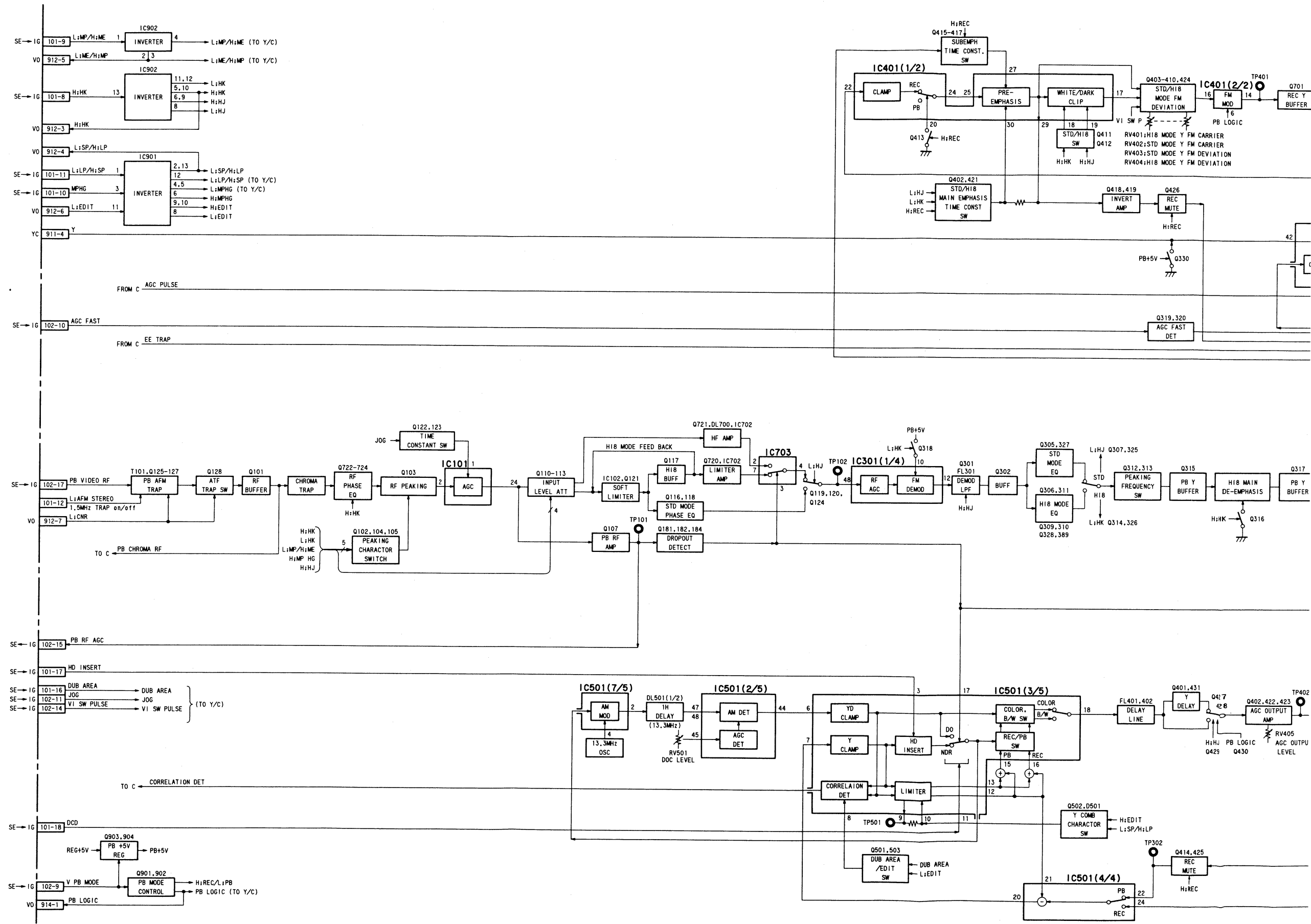




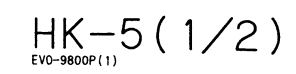


OVERALL (2/2)
EVO-9800P(1)

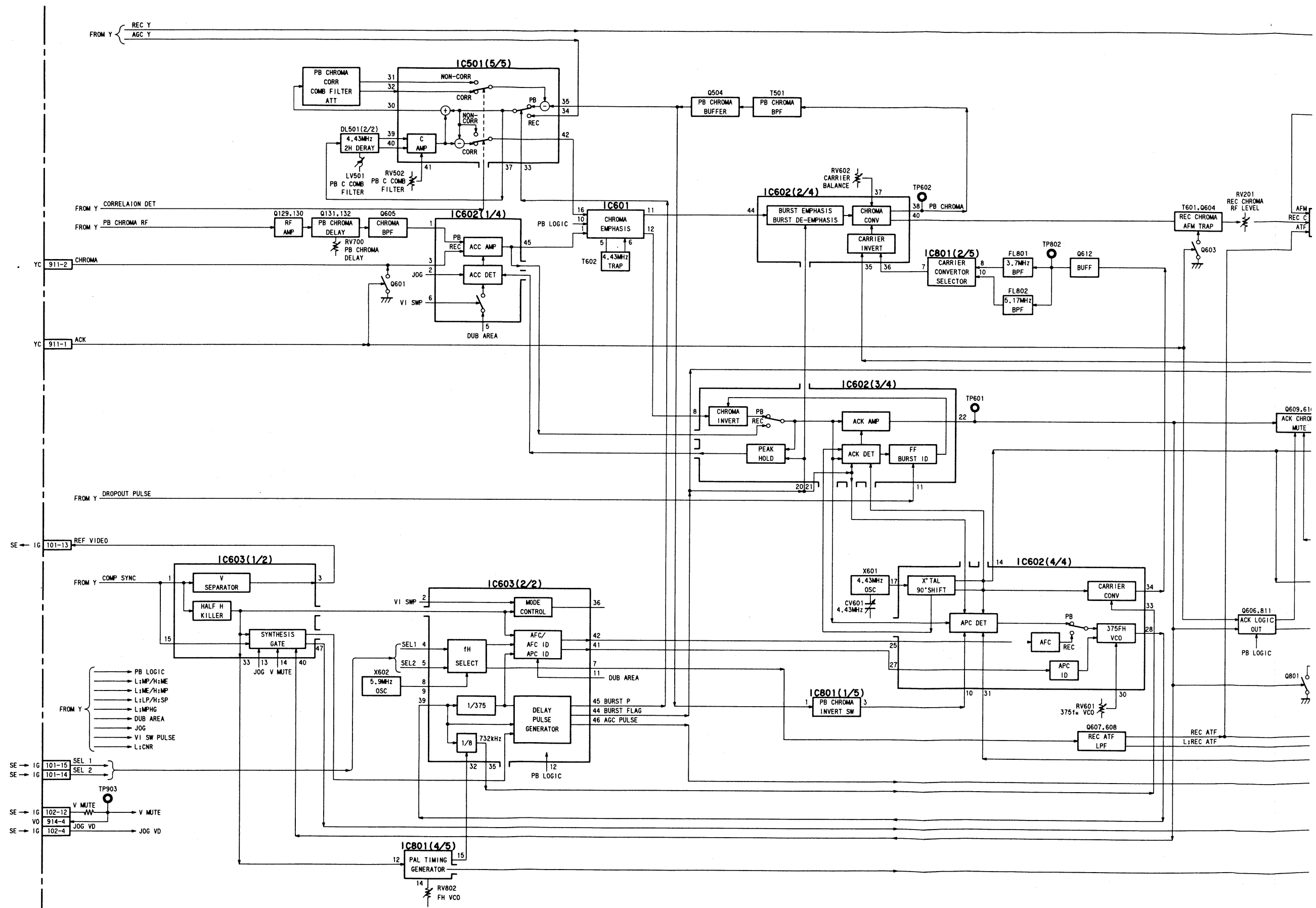
Y PROCESS



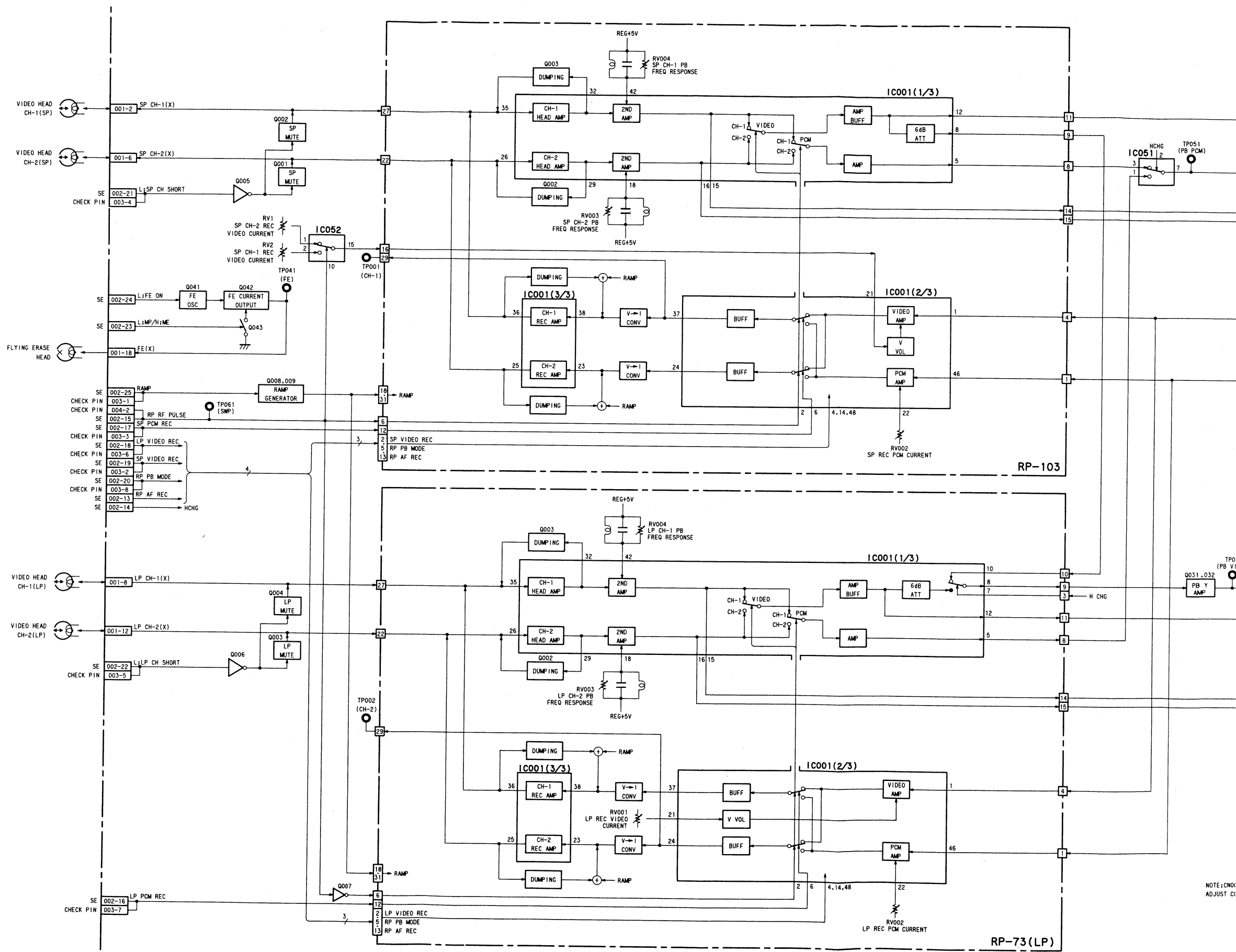
Y PROCESS Y PROCESS

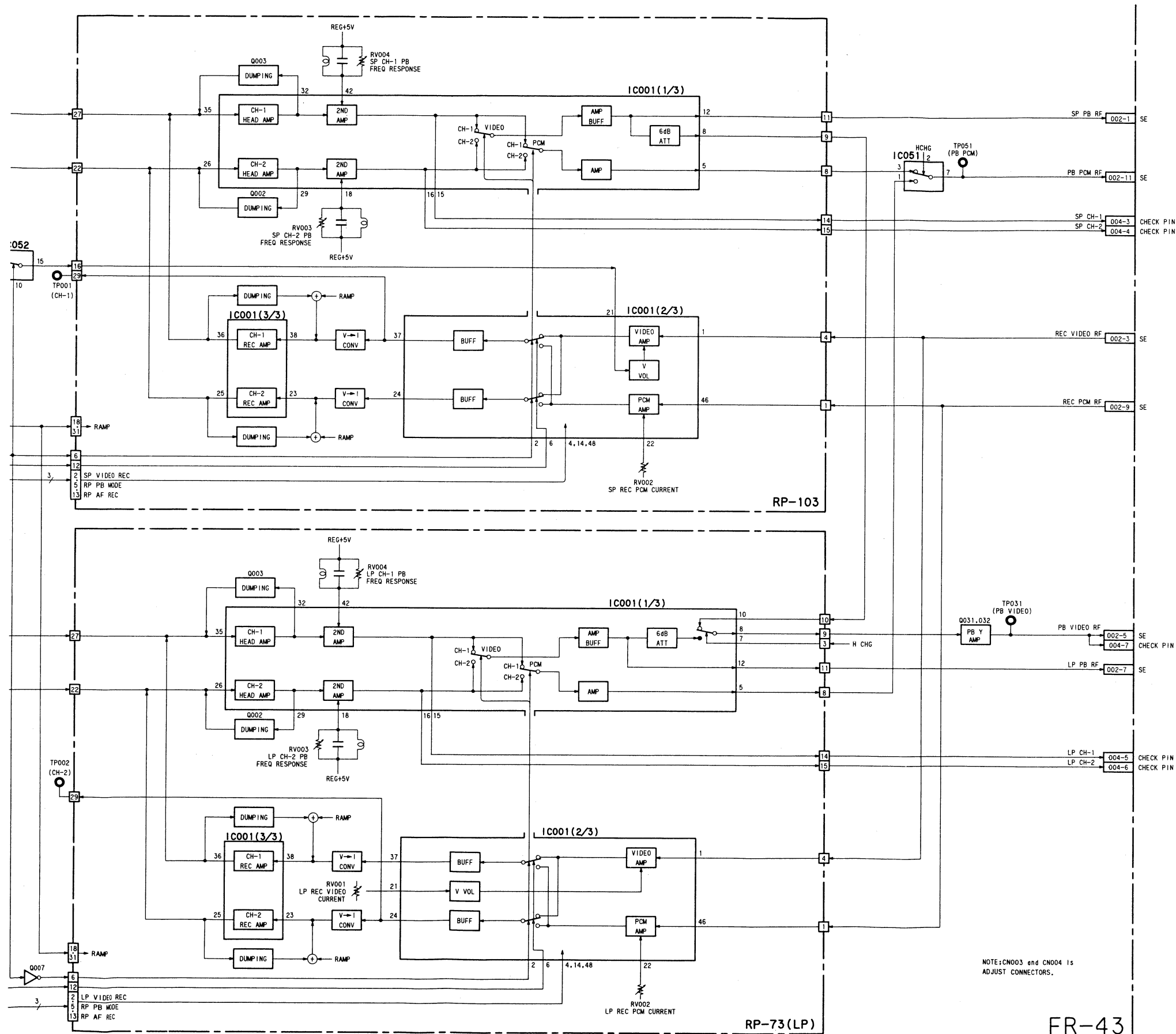


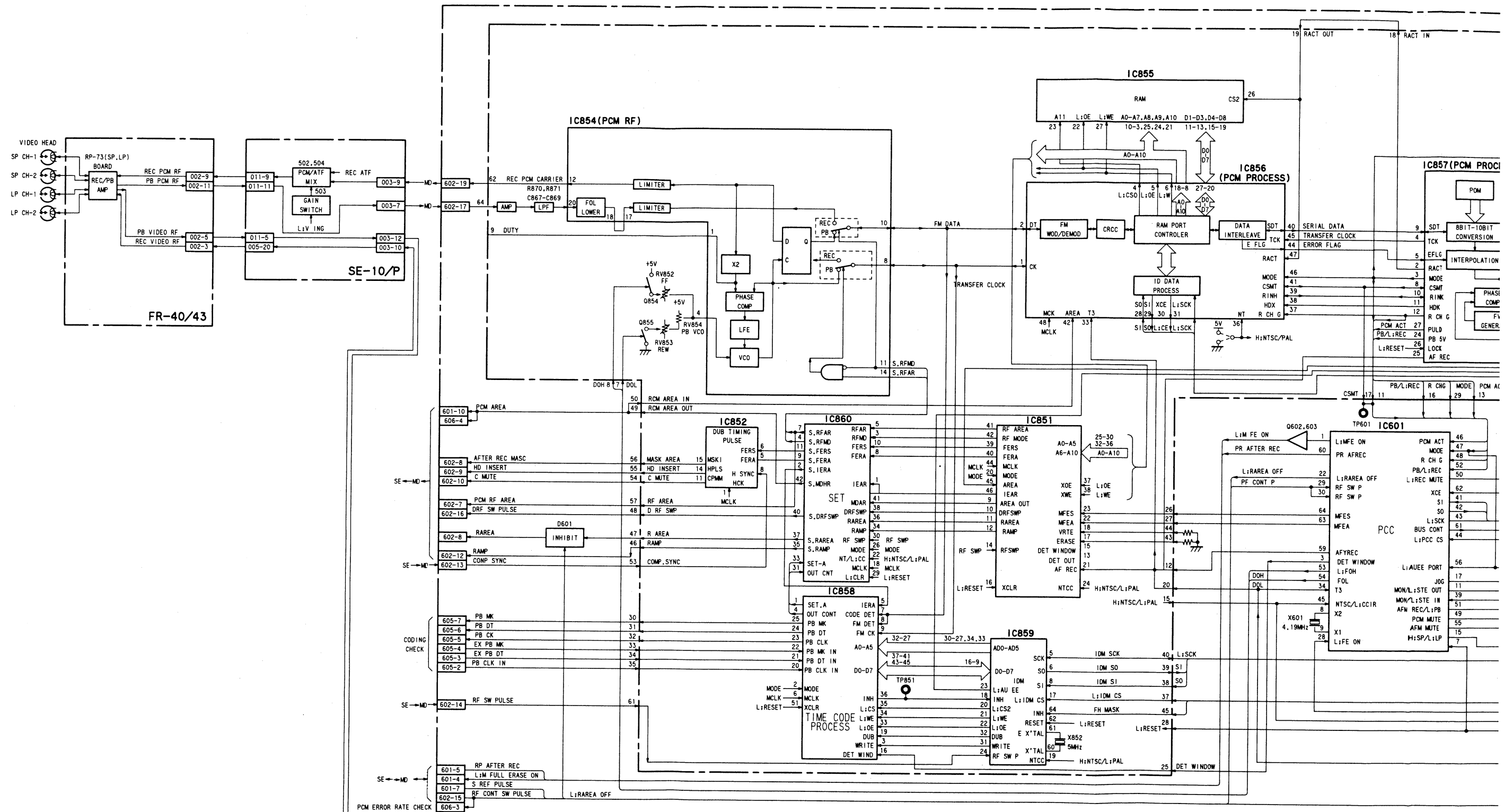
CHROMA PROCESS

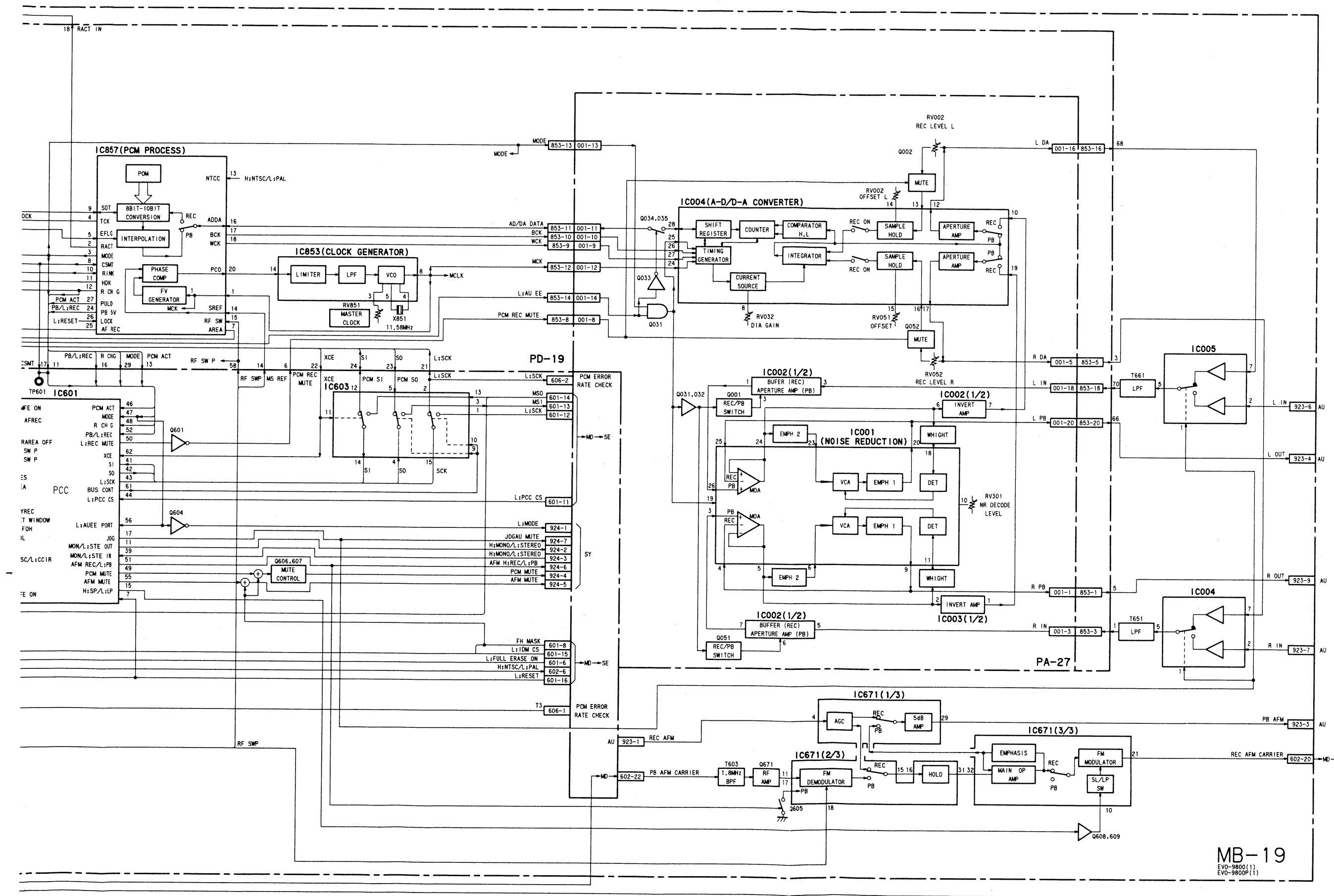


REC/PB HEAD AMP









DRUM/CAPSTAN/ATF SERVO

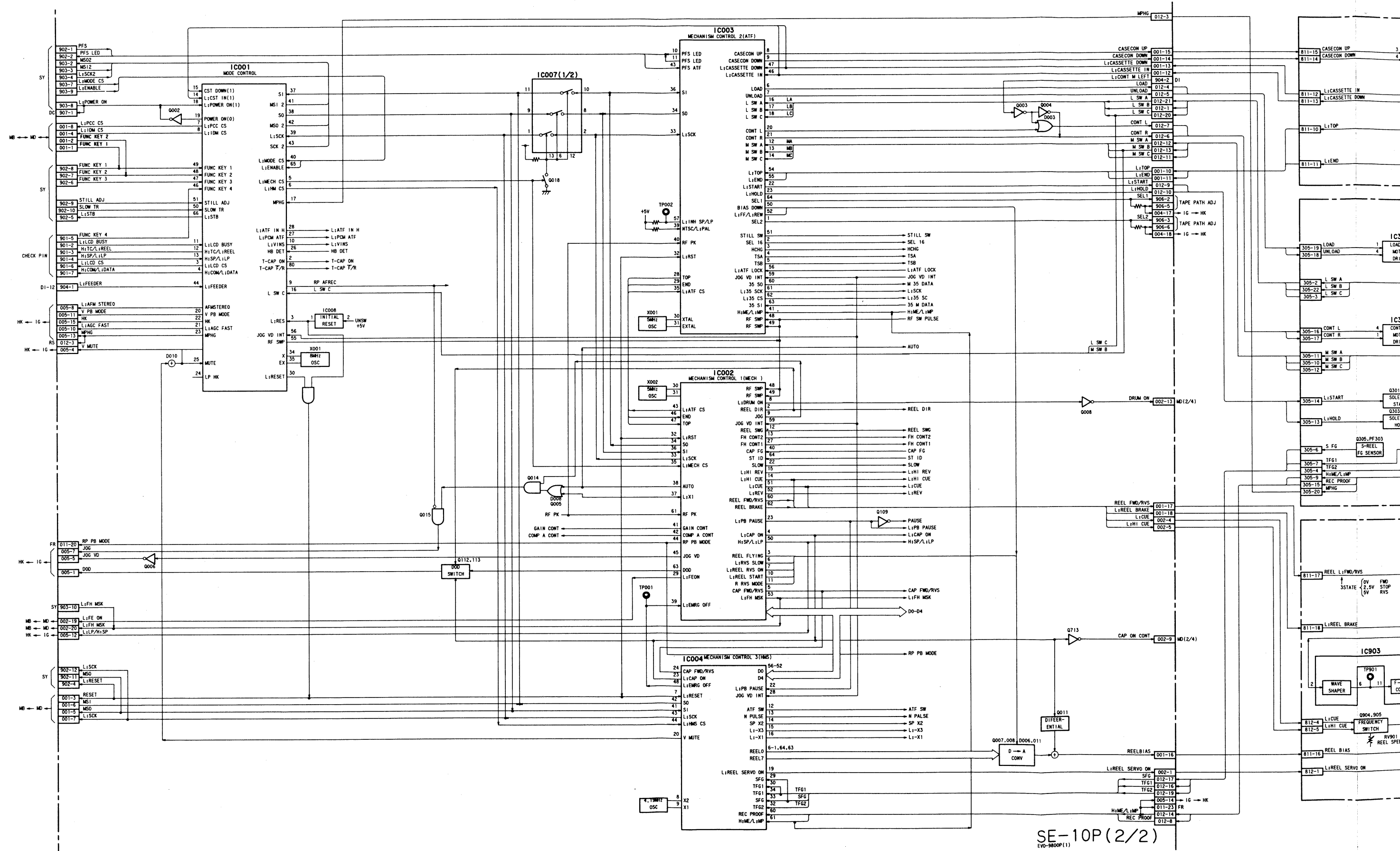
11-8

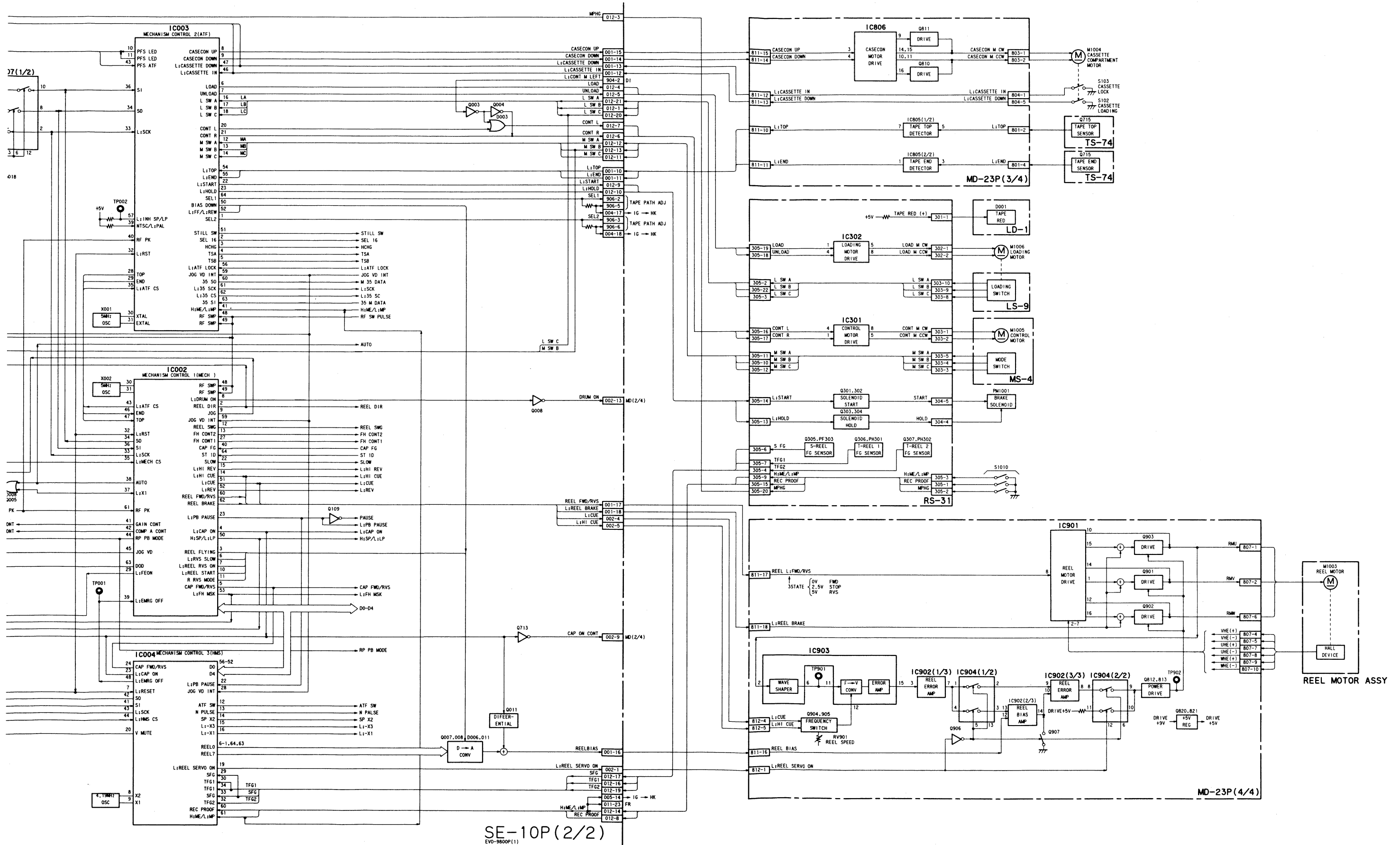


DRUM/CAPSTAN/ATF SERVO



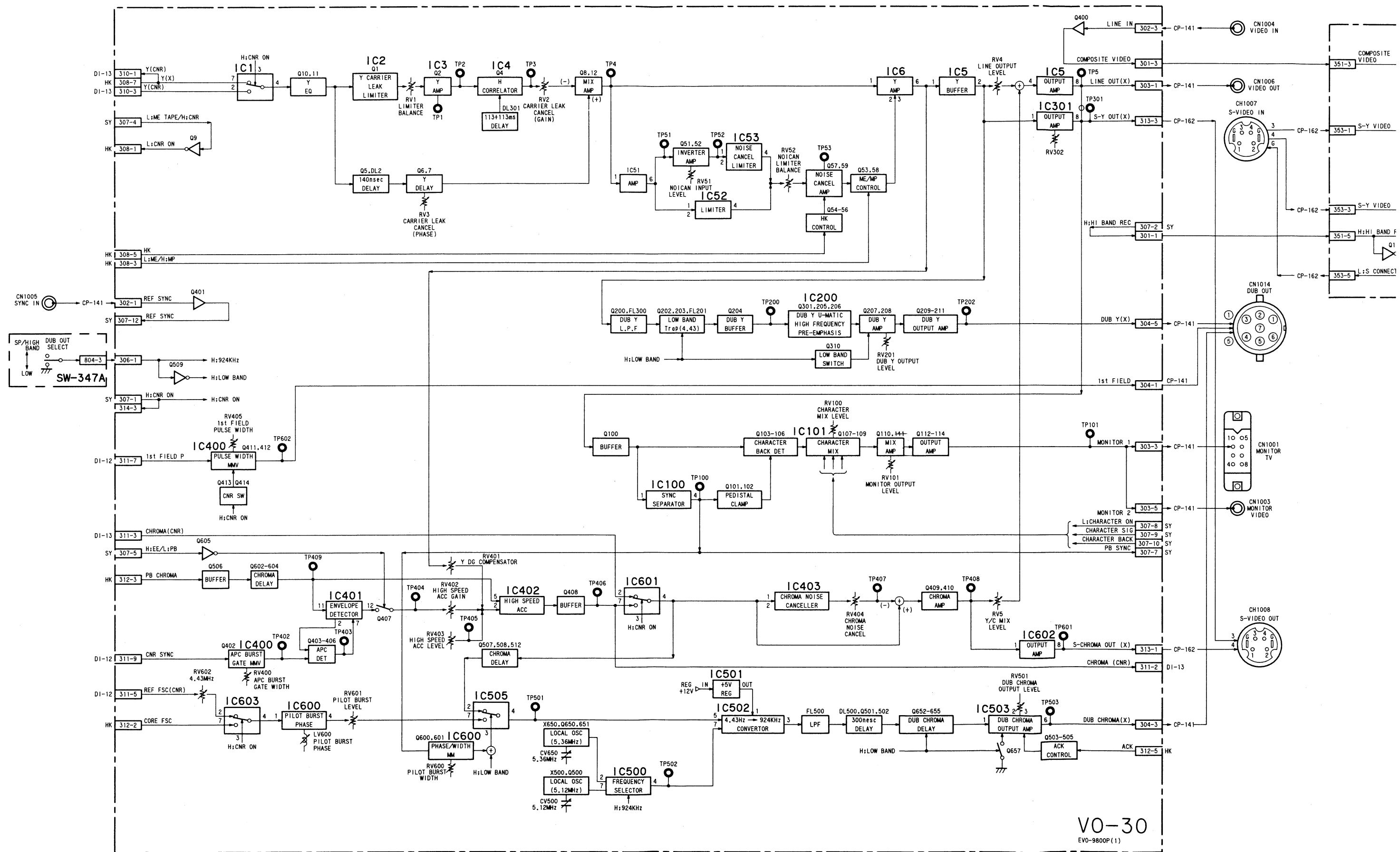
REEL SERVO, SYSTEM CONTROL


SE-10P(2/2)
EVO-9800P(1)



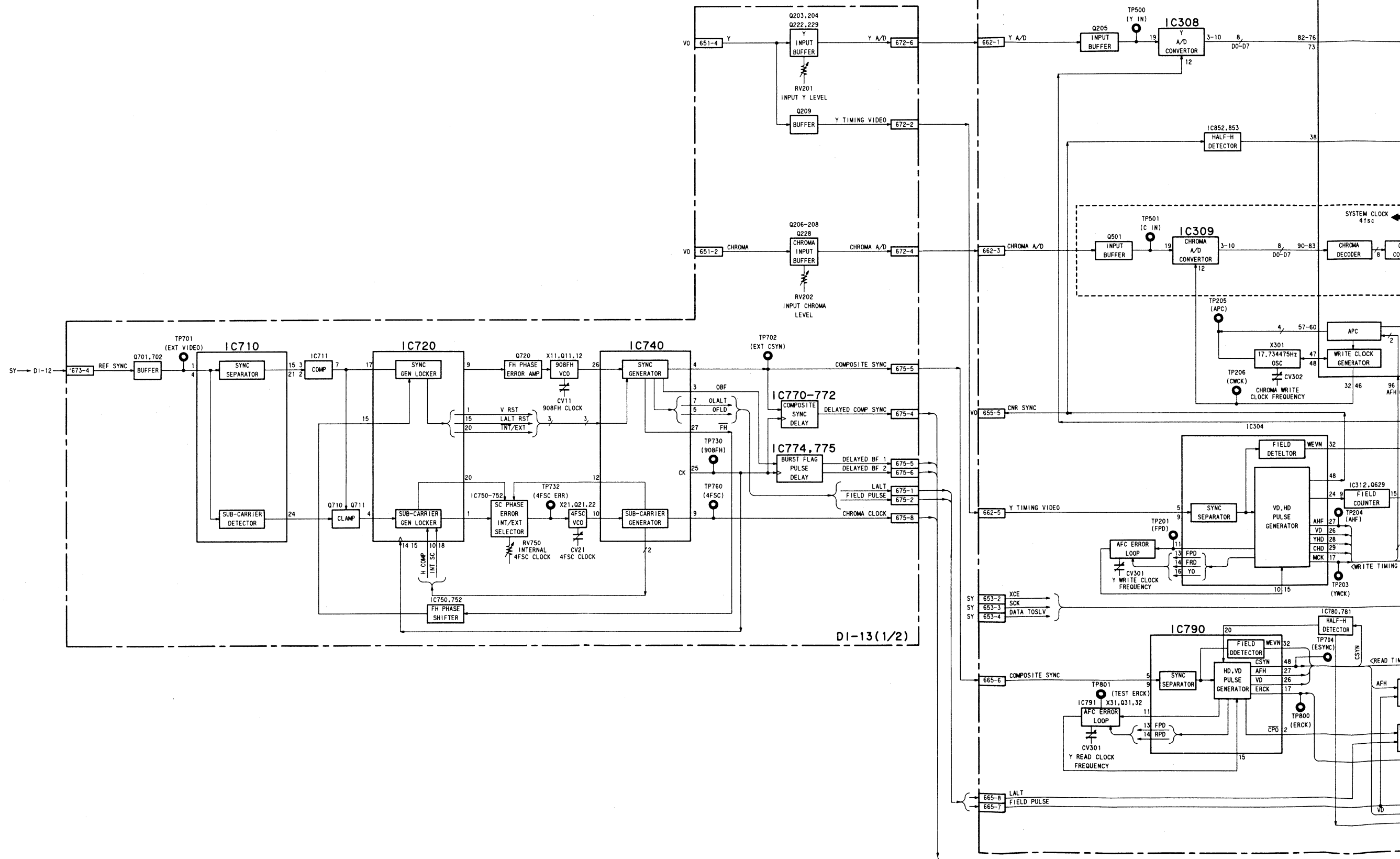
SE-10P(2/2)
EVO-9800P(1)

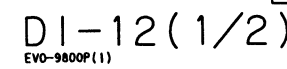
VIDEO INTERFACE

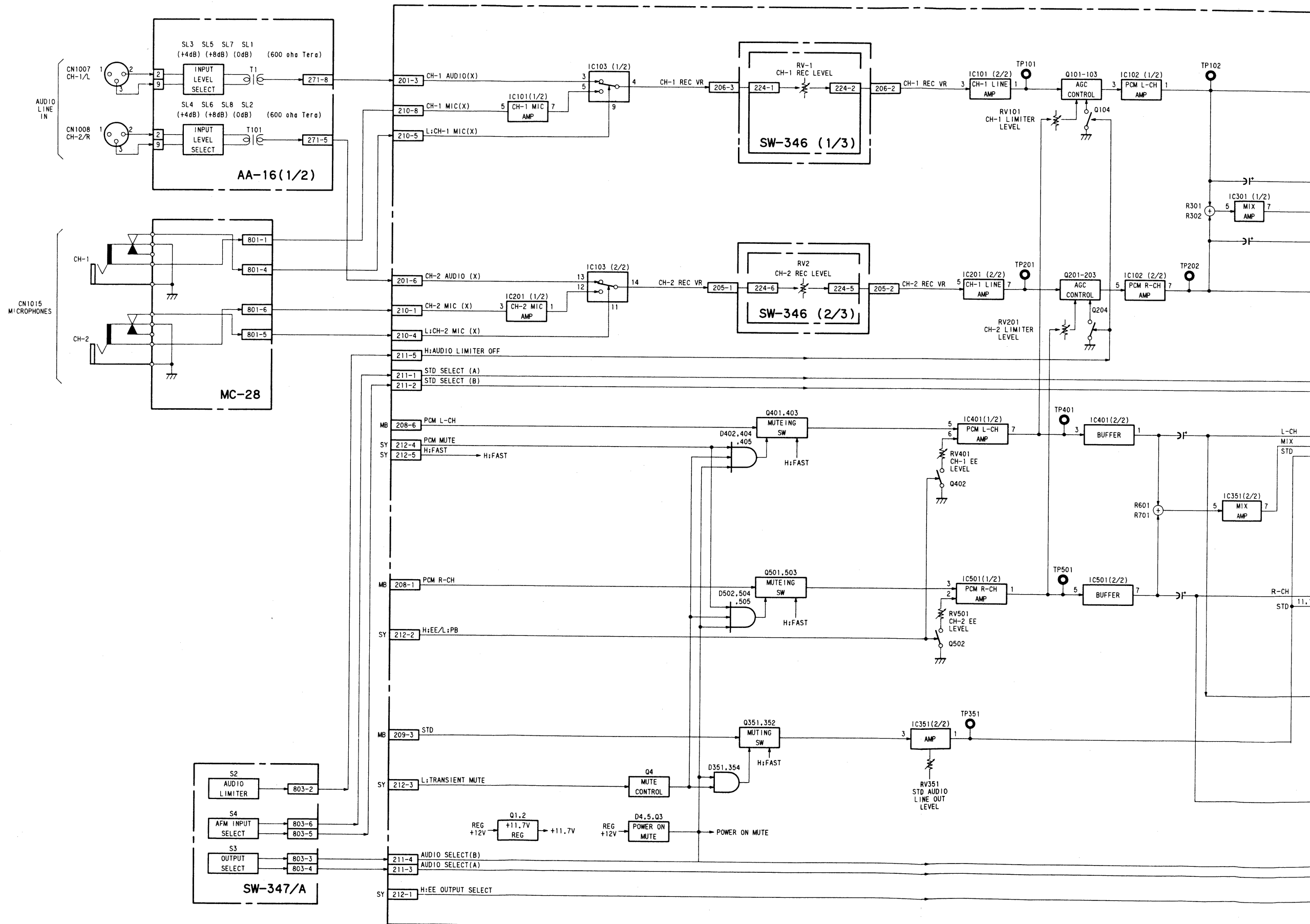


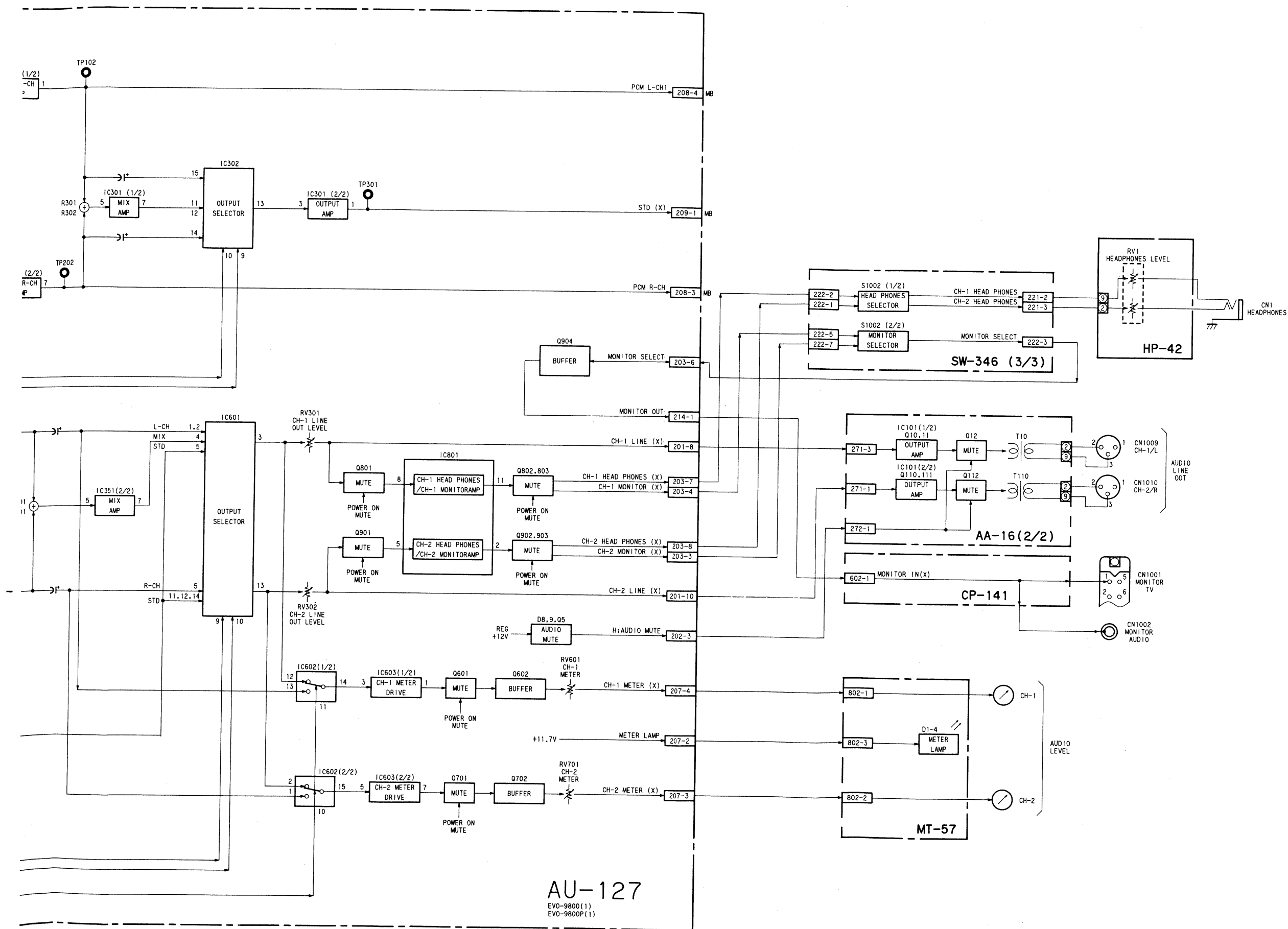
VIDEO INTERFACE





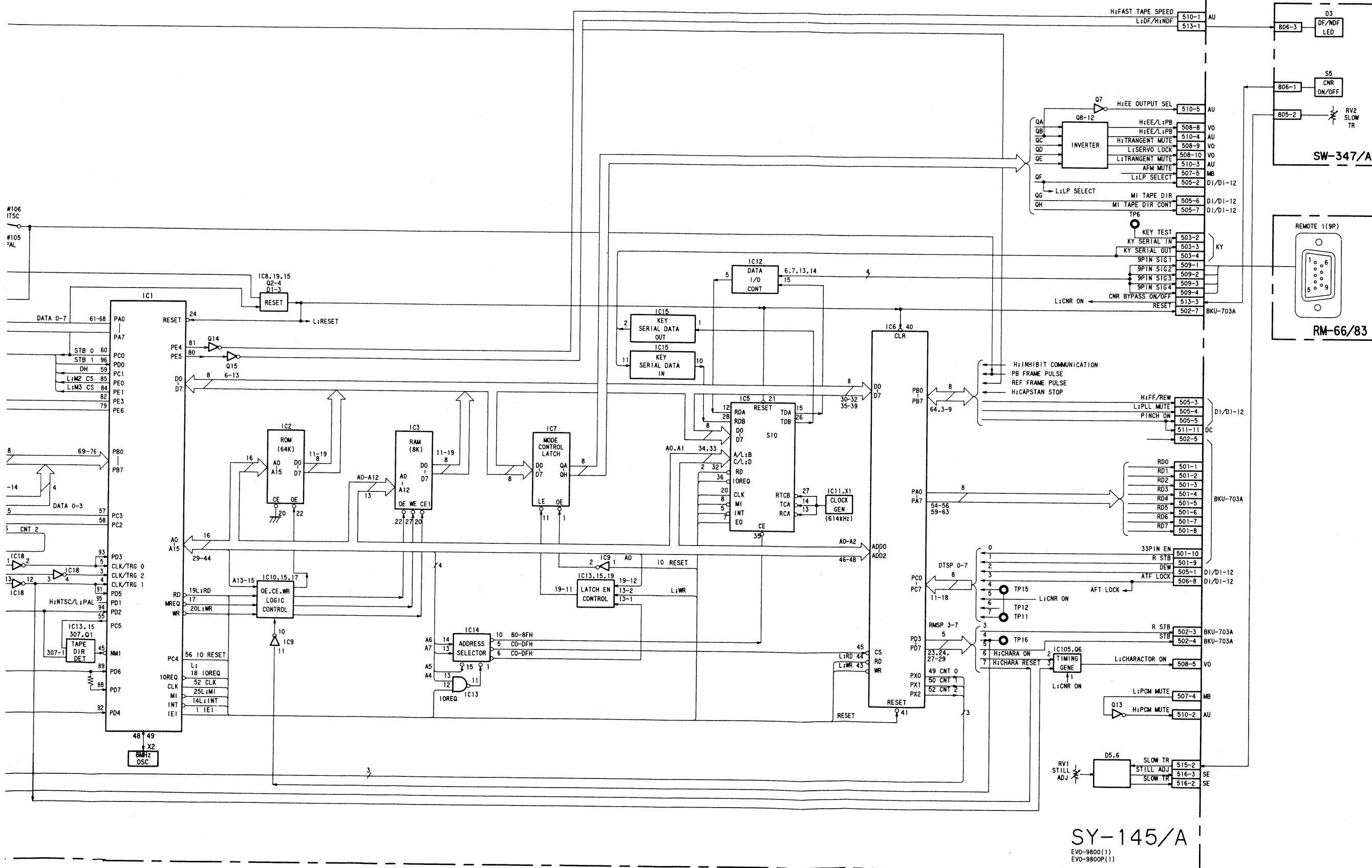




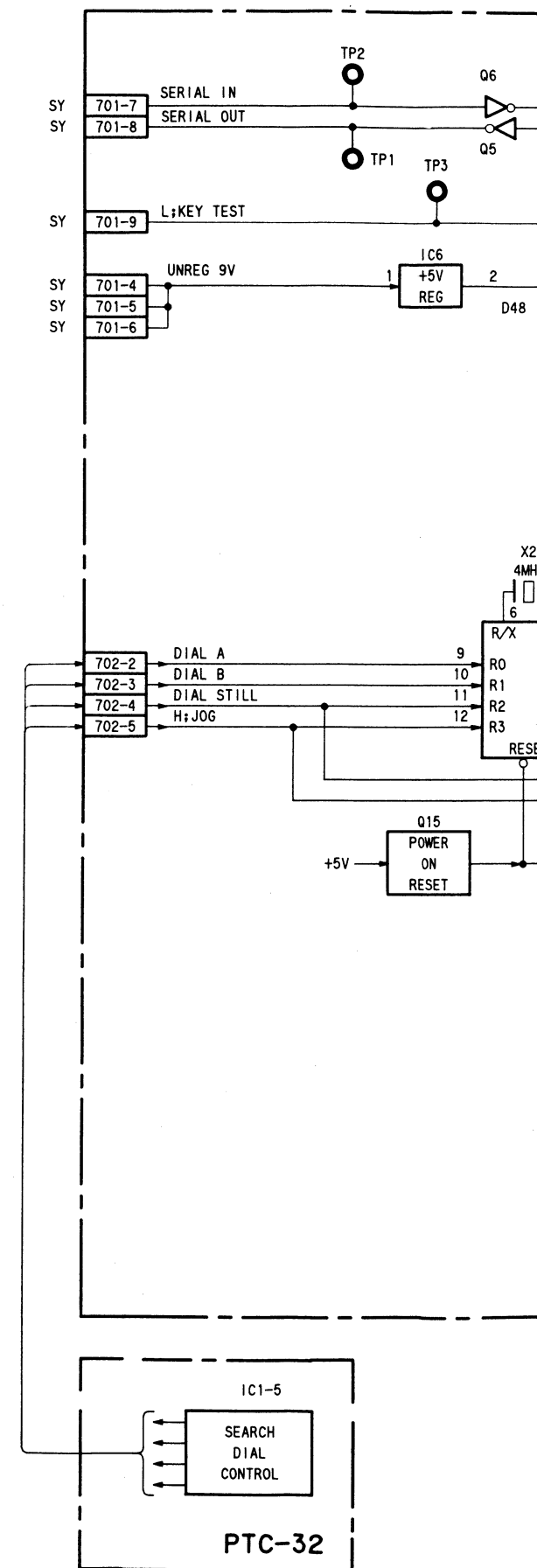
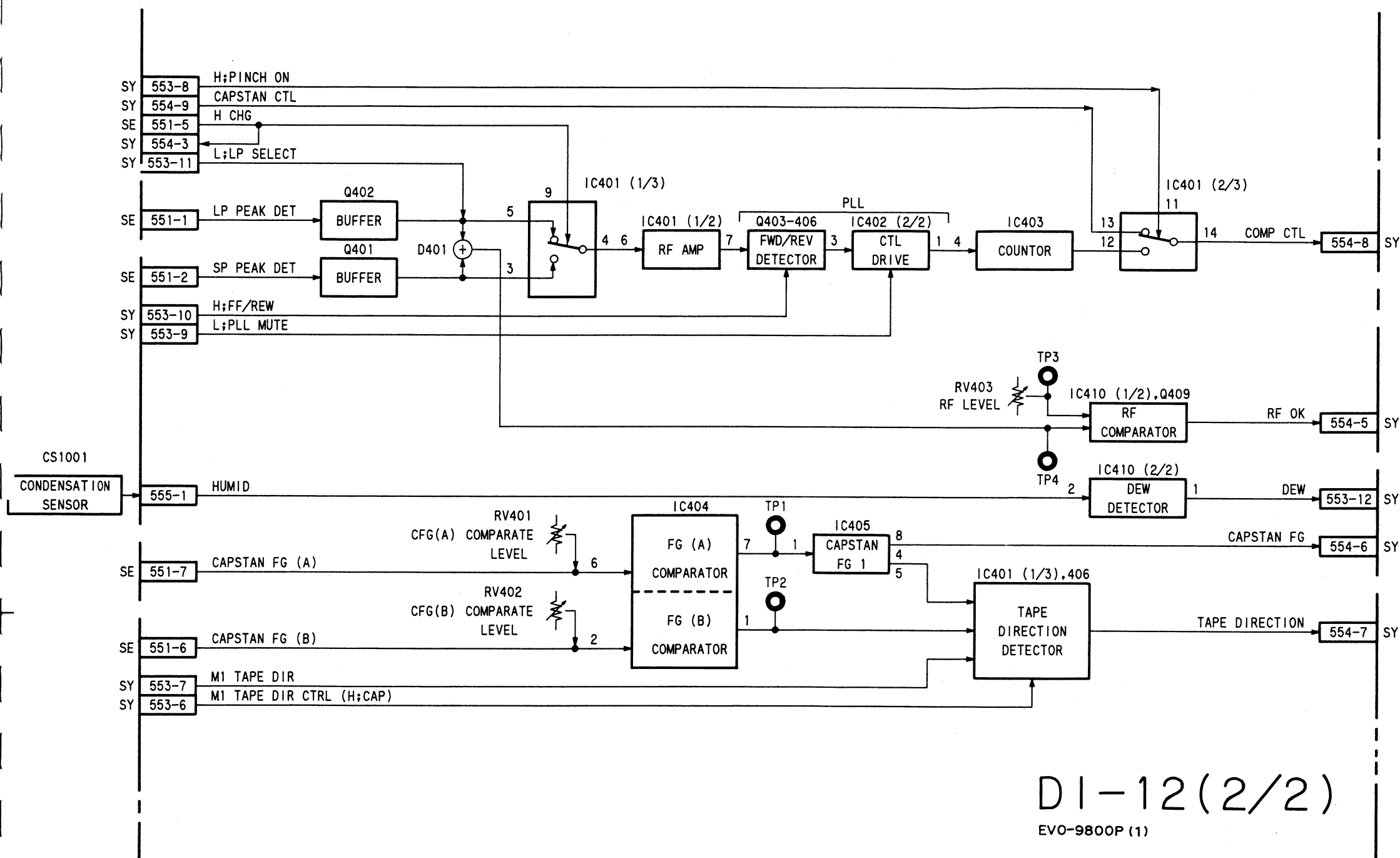


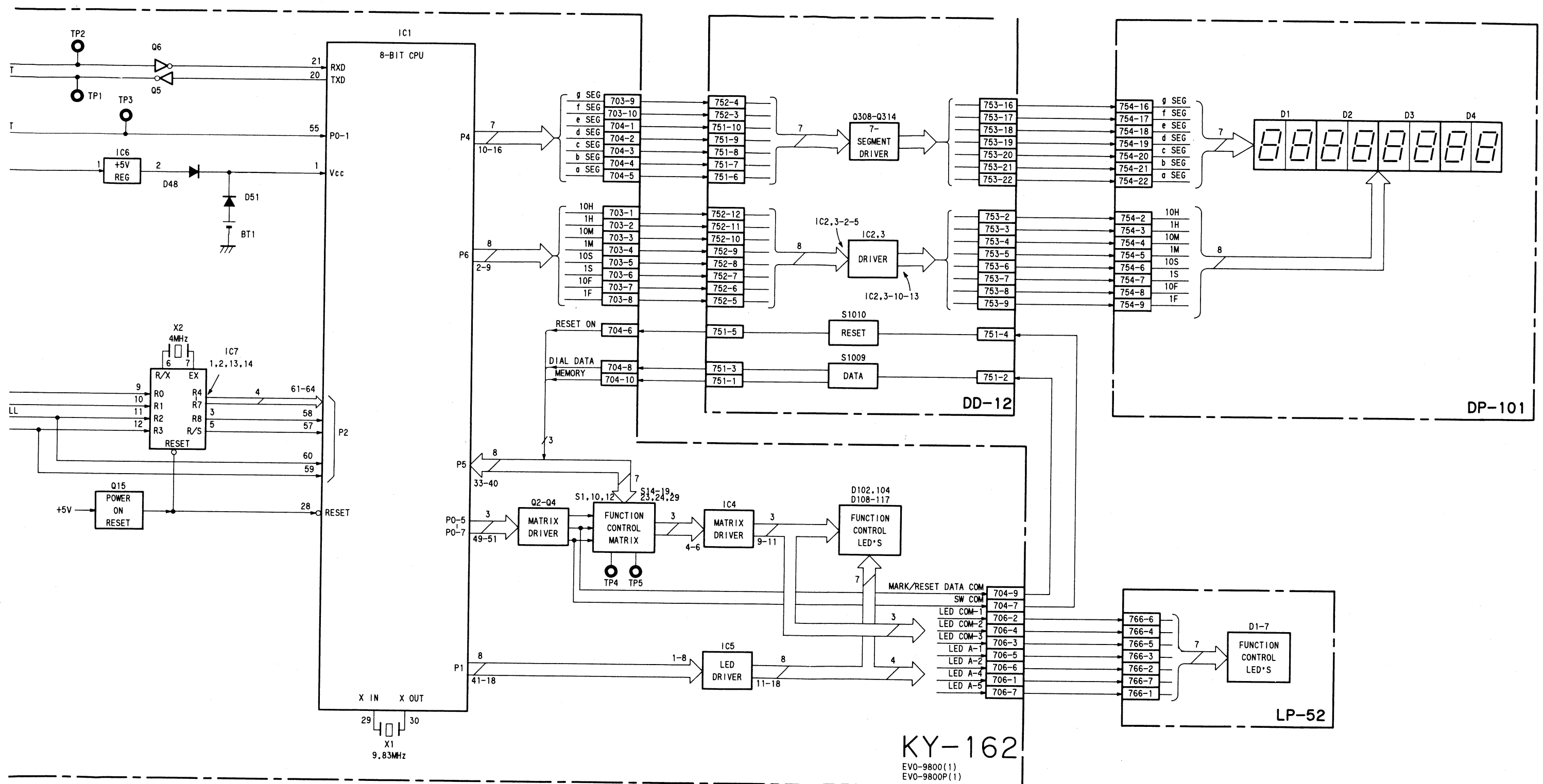
SYSTEM CONTROL





CTL DETECTOR/FUNCTION KEY BOARD





C1-5
ARCH
AL
TROL
IC-32

SECTION 12

SEMICONDUCTOR PIN ASSIGNMENT

ICs, transistors and diodes whose functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

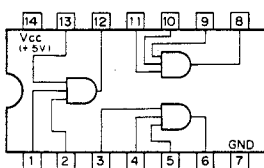
| IC | PAGE | IC | PAGE | IC | PAGE |
|---------------------|-------|----------------------|-------|--------------------|-------|
| 74F11PC | 12-3 | CXP80116-Q | 12-20 | SN74HC04N | 12-26 |
| 74F32PC | 12-3 | | | SN74HC08N | 12-26 |
| AN607P | 12-3 | GP1L52 | 12-18 | SN74HC139N | 12-27 |
| | | GP1L53 | 12-18 | SN74HC14N | 12-27 |
| BX-388L | 12-3 | LA4550 | 12-18 | SN74HC14NS | 12-27 |
| BX-389L | 12-3 | LA5005M | 12-20 | SN74HC163NS | 12-27 |
| BX-3915A | 12-3 | LB1616M | 12-21 | SN74HC193N | 12-27 |
| | | LM2903DQ | 12-20 | SN74HC20N | 12-27 |
| CF77309FR | 12-3 | LM2903M | 12-20 | SN74HC32N | 12-27 |
| CX20030 | 12-4 | | | SN74HC373N | 12-28 |
| CX20031 | 12-4 | M50747H-601SP | 12-22 | SN74HC74N | 12-28 |
| CX20035 | 12-5 | M5201FP | 12-22 | SN74HC74NS | 12-28 |
| CX20061 | 12-5 | M54516P | 12-20 | | |
| CX20099 | 12-5 | M54562P | 12-22 | TA7060AP | 12-28 |
| CX20115A | 12-5 | MB88201H-539N | 12-23 | TA7357AP | 12-28 |
| CX20117 | 12-6 | MB88201H-652M | 12-23 | TA7733F | 12-28 |
| CX22013 | 12-6 | MB88303 | 12-23 | TA7745F | 12-28 |
| CX23011 | 12-7 | MB88505H-1115M | 12-24 | TC4017BP | 12-28 |
| CX23012 | 12-8 | MBM27C512-25 | 12-25 | TC4052BPHB | 12-29 |
| CX23054 | 12-9 | MC14013BCP | 12-23 | TC4053BF | 12-24 |
| CXA1042M | 12-8 | MC14053BCP | 12-24 | TC4053BPHB | 12-24 |
| CXA1047M | 12-9 | MC14053BF | 12-24 | TC4066BF | 12-29 |
| CXA1106M | 12-10 | MC14538BCP | 12-25 | TC4069UBP | 12-29 |
| CXA1234AR | 12-10 | MC1496P | 12-23 | TC4071BP | 12-29 |
| CXD1051M | 12-11 | MC34051P | 12-25 | TC4538BF | 12-25 |
| CXD1077M | 12-11 | | | TC4538BP | 12-25 |
| CXD1095Q | 12-12 | NJM2233AM | 12-25 | TC74HC04F | 12-26 |
| CXD1175M | 12-12 | NJM2238M | 12-26 | TC74HC123F | 12-29 |
| CXD1216M | 12-13 | NJM4558M | 12-25 | TL082CP | 12-29 |
| CXD1217M | 12-13 | NJM4562D | 12-26 | TL431CLP | 12-29 |
| CXD1226Q | 12-14 | NJM4562M | 12-26 | TMPZ84C011AF | 12-30 |
| CXD1227Q | 12-16 | | | | |
| CXD1228Q | 12-17 | RC4560DD | 12-26 | UPC1037HA | 12-29 |
| CXD1229Q | 12-15 | RC7805FA | 12-26 | UPC324G2 | 12-29 |
| CXK1009P | 12-17 | RC7809FA | 12-26 | UPC339C | 12-30 |
| CXK1206M | 12-18 | RC78L05A | 12-26 | UPC358C | 12-30 |
| CXK5864BM-12L | 12-18 | RC78L09A | 12-26 | UPC358G2 | 12-30 |
| CXK5864BP-10L | 12-18 | RC78M05FA | 12-26 | UPC393G2 | 12-20 |
| CXP5024H-079Q | 12-18 | | | UPC78L05A | 12-31 |
| CXP5048H-204Q | 12-19 | S-8054ALB | 12-26 | UPD7564 | 12-31 |
| CXP5048H-205Q | 12-19 | SN74HC00NS | 12-26 | | |

The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

SEMICONDUCTOR INDEX

| TRANSISTOR | PAGE | DIODE | PAGE |
|----------------|-------|----------------|-------|
| 2SA1115 | 12-31 | 10E-2 | 12-32 |
| 2SA1122 | 12-31 | 1S2835 | 12-32 |
| 2SA1162 | 12-31 | 1S2837 | 12-32 |
| 2SA1175 | 12-31 | 1SS119 | 12-32 |
| 2SA1226 | 12-31 | 1SS123 | 12-32 |
| 2SA1385 | 12-31 | 1SS133 | 12-32 |
| 2SA812 | 12-31 | 1SS193 | 12-32 |
| | | 1SS196 | 12-32 |
| 2SB649A | 12-31 | 1SS97 | 12-32 |
| 2SB733 | 12-31 | 1SS99 | 12-32 |
| 2SB856 | 12-31 | 1T33C | 12-32 |
| | | | |
| 2SC1623 | 12-31 | E10DS2 | 12-32 |
| 2SC1815 | 12-31 | | |
| 2SC1826 | 12-31 | FC54M | 12-32 |
| 2SC2223 | 12-31 | | |
| 2SC2714 | 12-31 | GL-5HD5 | 12-32 |
| 2SC2715 | 12-31 | GP-1L52 | 12-32 |
| 2SC2785 | 12-31 | GP-1L53 | 12-32 |
| 2SC2785E | 12-31 | | |
| 2SC2878 | 12-31 | LB-402VK | 12-32 |
| 2SC3326 | 12-31 | LT-9200D | 12-32 |
| 2SC3735 | 12-31 | LT-9200H | 12-32 |
| 2SC3327 | 12-31 | | |
| 2SC403SP | 12-31 | MA159 | 12-32 |
| | | | |
| 2SD669A | 12-31 | RD??ESB? | 12-32 |
| | | | |
| DTA114EK | 12-31 | TLG124A | 12-33 |
| DTA124EK | 12-31 | TLG256 | 12-33 |
| DTA124XS | 12-32 | TLUG144 | 12-33 |
| DTA143XS | 12-32 | TLUG154 | 12-33 |
| DTA144EK | 12-31 | TLUY144 | 12-33 |
| DTA144ES | 12-32 | TLY256 | 12-33 |
| DTC114EK | 12-32 | | |
| DTC124EK | 12-32 | U05E | 12-33 |
| DTC144EK | 12-32 | | |
| DTC144ES | 12-32 | | |
| | | | |
| FMS2 | 12-32 | | |
| FMW1 | 12-32 | | |
| | | | |
| NJL7141E | 12-32 | | |

74F11PC (FSC)

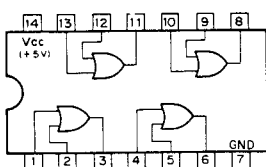
TTL 3-INPUT POSITIVE-AND GATE
— TOP VIEW —

$$Y = A \cdot B \cdot C = \overline{\overline{A} + \overline{B} + \overline{C}}$$

| A | B | C | Y |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

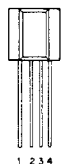
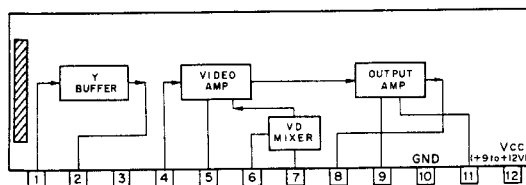
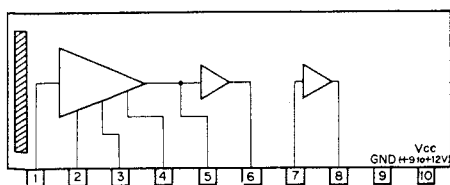
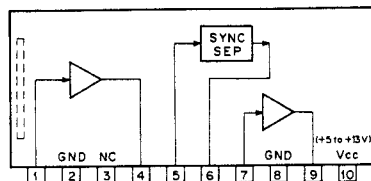
0: LOW LEVEL
1: HIGH LEVEL

74F32PC (FSC)

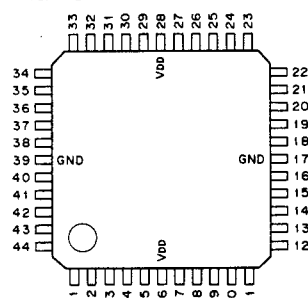
TTL 2-INPUT POSITIVE-OR GATE
— TOP VIEW —

$$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$$

| A | B | Y |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

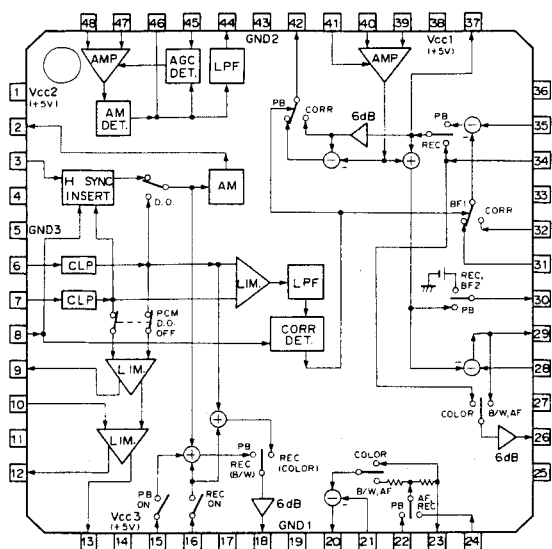
0: LOW LEVEL
1: HIGH LEVELAN607P (MATSUSHITA)
WIDE BAND AMPLIFIER
— PRINTED SIDE VIEW —1: OUTPUT
2: Vcc (+12V)
3: INPUT
4: GNDBX388L (ROHM)
VIDEO AMP/VD MIXER
— PRINTED SIDE —BX389L (ROHM)
VIDEO AMPLIFIER
— PRINTED SIDE —BX3915A (SONY)
SYNC SEPARATOR
— PRINTED SIDE —

CF77309FR (TI)

CMOS TIMING GENERATOR FOR 8mm VTR ADDRESS SYSTEM
— TOP VIEW —(V_{DD} = +5V)

| PIN NO. | I/O | SIGNAL | PIN NO. | I/O | SIGNAL | PIN NO. | I/O | SIGNAL | PIN NO. | I/O | SIGNAL |
|---------|-----|-----------------|---------|-----|----------|---------|-----|-----------------|---------|-----|---------|
| 1 | I | IEAR | 12 | I | CSMT | 23 | O | LCLK | 34 | I | RAMP |
| 2 | O | SIEAR | 13 | I | CRCMON1 | 24 | O | SW POS | 35 | O | S RAMP |
| 3 | I | RFMDZ | 14 | I | FMCK | 25 | I | CAM/DECK | 36 | I | RAREA |
| 4 | O | S RFMD | 15 | I | P1/P2 | 26 | I | MODE | 37 | O | S RARE |
| 5 | I | RFAR | 16 | I | AUTO | 27 | I | WRITE | 38 | I | DRSWP |
| 6 | — | V _{DD} | 17 | — | GND | 28 | — | V _{DD} | 39 | — | GND |
| 7 | O | S RFAR | 18 | I | MCLK1 | 29 | I | RESET | 40 | O | S DRSWP |
| 8 | I | FERA | 19 | O | MCLK2 | 30 | I | RFSWP | 41 | I | MDAR |
| 9 | O | S FERA | 20 | I | SREF | 31 | O | OUT CNT | 42 | O | S MDAR |
| 10 | I | FERS | 21 | O | PCO | 32 | O | SET 1 | 43 | I | TEST 1 |
| 11 | O | S FERS | 22 | I | NTSC/PAL | 33 | O | SET1010 | 44 | I | TEST 2 |

CX20031 (SONY) FLAT PACKAGE

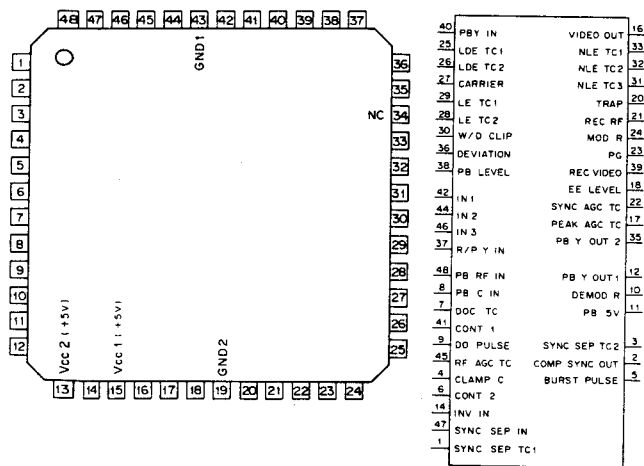
Y/C SEPARATION COMB FILTER
- TOP VIEW -

| PIN No. | PIN NAME | PIN No. | PIN NAME | PIN No. | PIN NAME |
|---------|------------|---------|------------|---------|--------------|
| 1 | Vcc2 | 17 | DOP IN | 33 | BF2 |
| 2 | AM OUT | 18 | Y OUT2 | 34 | REC VIDEO IN |
| 3 | HD IN | 19 | GND1 | 35 | PB CHROMA IN |
| 4 | XTAL | 20 | Y OUT1 | 36 | PB SV IN |
| 5 | GND3 | 21 | PB MIX IN2 | 37 | CDL OUT |
| 6 | YD IN | 22 | PB Y IN | 38 | Vcc1 |
| 7 | Y IN | 23 | FSC TRAP | 39 | CDL1 IN |
| 8 | CORR ADJ | 24 | REC Y IN | 40 | CDL2 IN |
| 9 | Y-YD OUT | 25 | ACK IN | 41 | CD ADJ |
| 10 | Y-YD IN | 26 | REC Y OUT | 42 | C OUT |
| 11 | PCM IN | 27 | BF1 | 43 | GND2 |
| 12 | LIM OUT2 | 28 | Y BPF IN | 44 | YD OUT |
| 13 | LIM OUT1 | 29 | Y OUT3 | 45 | YD ADJ |
| 14 | Vcc3 | 30 | CT OUT | 46 | PEAK HOLD |
| 15 | PB MIX IN1 | 31 | CT IN2 | 47 | YDL1 IN |
| 16 | REC MIX IN | 32 | CT IN1 | 48 | YDL2 IN |

ACK ; ACKNOWLEDGMENT
ADJ ; ADJUSTMENT
AF ; AFTER RECODING
AGC ; AUTOMATIC GAIN CONTROL
AM ; AMPLITUDE MODULATION
AMP ; AMPLIFIER
BF ; BURST FLAG
BPF ; BAND PASS FILTER
C ; CHROMA
CD ; DEFERED C
CDL ; C DELAY LINE
CLP ; CLAMP
CORR ; CORRELATION
CT ; C CROSSTALK
DET ; DETECTOR
DOP ; DROP-OUT
D.O. ; DROP-OUT
FSC ; FREQUENCY OF SUB-CARRIER

GND ; GROUND
H ; HORIZONTAL
HD ; H DRIVE PULSE
IN ; INPUT
LIM ; LIMITER
LPF ; LOW PASS FILTER
MIX ; MIXER
OUT ; OUTPUT
PB ; PLAYBACK
PCM ; PULSE CODE MODULATION
REC ; RECORDING
SYNC ; SYNCHRONIZATION
Vcc ; POWER
XTAL ; CRYSTAL
Y ; LUMINANCE
YD ; DEFERRED Y
YDL ; Y DELAY LINE

CX20030 (SONY) FLAT PACKAGE

VIDEO Y SIGNAL PROCESSOR
- TOP VIEW -

| PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL |
|---------|-----|--------------|---------|-----|-------------|---------|-----|-------------|
| 1 | I | SYNC SEP TC1 | 17 | I | PEAK AGC TC | 33 | I | NLE TC1 |
| 2 | O | COMP SYNC | 18 | I | EE LEVEL | 34 | - | NC |
| 3 | I | SYNC SEP TC2 | 19 | - | GND2 | 35 | O | PB Y OUT2 |
| 4 | I | CLAMP C | 20 | I | TRAP | 36 | I | DEVIATION |
| 5 | I | BURST PULSE | 21 | O | REC RF | 37 | I | R/P Y IN |
| 6 | I | CONT2 | 22 | I | SYNC AGC TC | 38 | I | PB LEVEL |
| 7 | I | DOC TC | 23 | I | PG | 39 | O | REC VIDEO |
| 8 | I | PB C | 24 | I | MOD R | 40 | I | PB Y IN |
| 9 | O | DO PULSE | 25 | I | LDE TC1 | 41 | I | CONT1 |
| 10 | I | DEMOD R | 26 | I | LDE TC2 | 42 | I | IN1 |
| 11 | I | PB 5V | 27 | I | CARRIER | 43 | - | GND1 |
| 12 | O | PB Y OUT1 | 28 | I | LE TC2 | 44 | I | IN2 |
| 13 | - | Vcc2 | 29 | I | LE TC1 | 45 | I | RF AGC TC |
| 14 | I | INV IN | 30 | I | W/D CLIP | 46 | I | IN3 |
| 15 | - | Vcc1 | 31 | I | NLE TC3 | 47 | I | SYNC SEP IN |
| 16 | O | VIDEO OUT | 32 | I | NLE TC2 | 48 | I | PB RF IN |

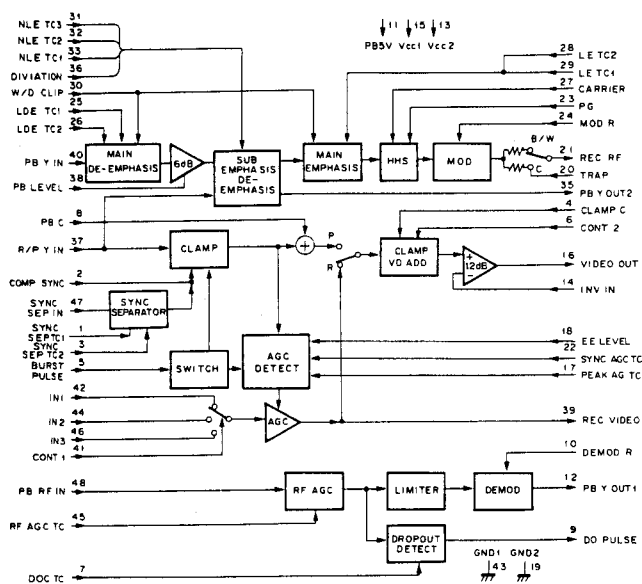
(V_{DD} = +5V)

INPUT

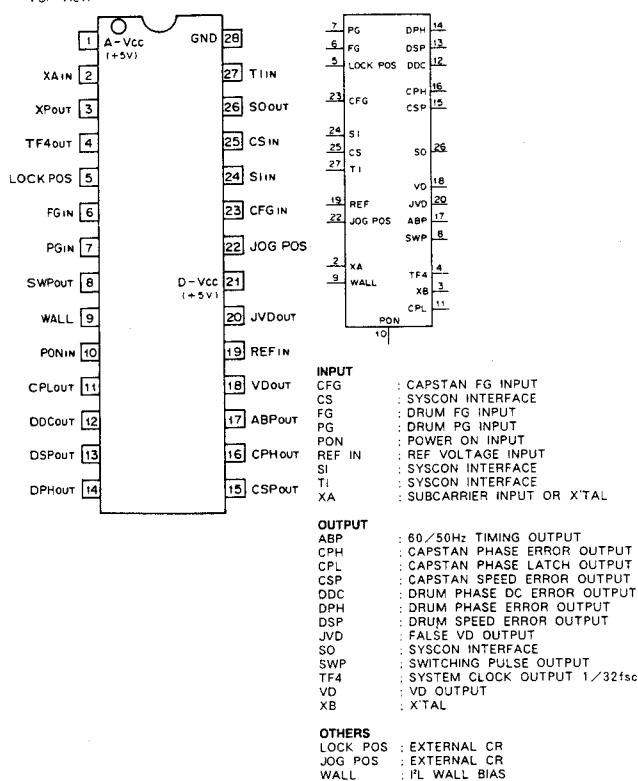
BURST PULSE : BURST PULSE INPUT
CARRIER : FM MODULATOR CARRIER CONTROL INPUT
CLAMP C : EXTERNAL CAPACITOR FOR CLAMPING INPUT
CONT 1 : INTERNAL SWITCH CONTROL INPUT
CONT 2 : MUTING AND VD-ADD CONTROL INPUT
DEMOD R : EXTERNAL RESISTOR FOR FM DEMODULATOR INPUT
DEVIATION : DEVIATION CONTROL INPUT
DOC TC : EXTERNAL CAPACITOR FOR DROPOUT DETECTION INPUT
EE LEVEL : SYNC AGC CONTROL INPUT
IN 1 - IN 3 : RECORDING VIDEO SIGNAL INPUTS
INV IN : INVERTING INPUT FOR VIDEO CIRCUIT
LDE TC1,TC2 : EXTERNAL RESISTOR FOR LINEAR DE-EMPHASIS INPUTS
LE TC1,TC2 : EXTERNAL CR FOR LINEAR EMPHASIS INPUTS
MOD R : EXTERNAL RESISTOR FOR FM MODULATOR INPUT
NLE TC1 - NLE TC3 : EXTERNAL CAPACITOR FOR NON-LINEAR EMPHASIS INPUTS
PB 5V : POWER FOR PLAYBACK SYSTEM INPUT
PB C : PB CHROMA INPUT AND M/C CONTROL INPUT
PB LEVEL : PB Y OUT2 SIGNAL CONTROL INPUT
PB RF IN : PB RF (FM) INPUT
PB Y IN : PB Y SIGNAL FOR DE-EMPHASIS INPUT
PEAK AGC TC : EXTERNAL CR INPUT FOR PEAK AGC
PG : PG (30Hz) SIGNAL INPUT
RF AGC TC : EXTERNAL CR FOR RF AGC INPUT
R/P Y IN : Y SIGNAL FOR CLAMPING INPUT
SYNC AGC TC : EXTERNAL CR INPUT FOR SYNC AGC
SYNC SEP IN : SYNC SEPARATION SIGNAL INPUT
SYNC SEP TC1,TC2 : EXTERNAL CR INPUT FOR SYNC SEPARATION
TRAP : TRAP INPUT
W/D CLIP : LINEAR EMPHASIS AND W/D CLIP CONTROL INPUT

OUTPUT

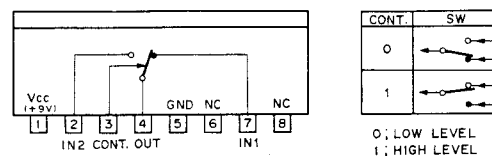
COMP SYNC : COMPOSITE SYNC OUTPUT
DO PULSE : DROPOUT PULSE OUTPUT
PB Y OUT1 : FREQUENCY DEMODULATOR OUTPUT
PB Y OUT2 : PB Y OUTPUT
REC RF : Y-FM SIGNAL OUTPUT
REC VIDEO : AMPLIFIED Y SIGNAL OUTPUT
VIDEO OUT : VIDEO OUTPUT



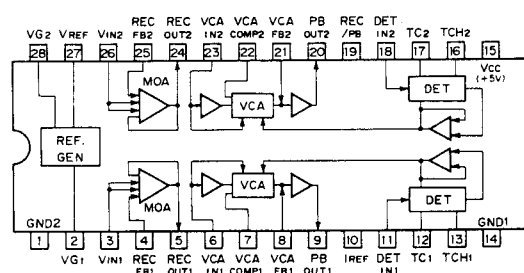
CX20035 (SONY) FLAT PACKAGE
DRUM/CAPSTAN SERVO CONTROLLER
— TOP VIEW —



CX20061 (SONY)
ANALOG SWITCH
— SIDE VIEW —

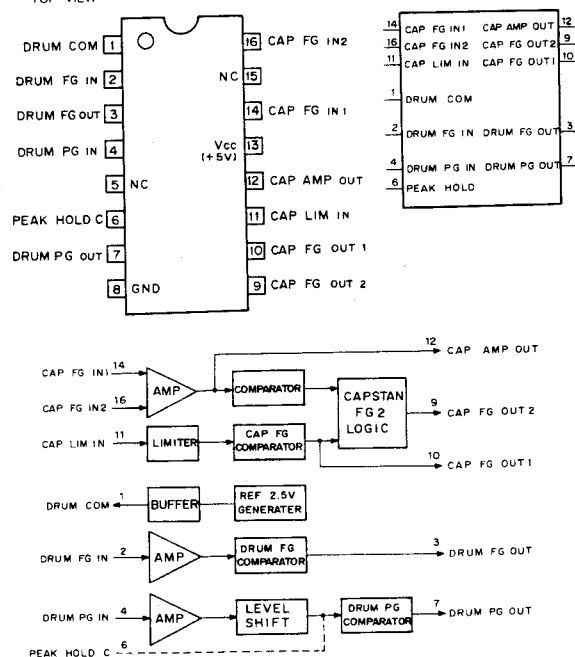


CX20099 (SONY) FLAT PACKAGE
VOLTAGE CONTROLLED AMP/DETECTOR/MAIN OPERATIONAL AMP
— TOP VIEW —

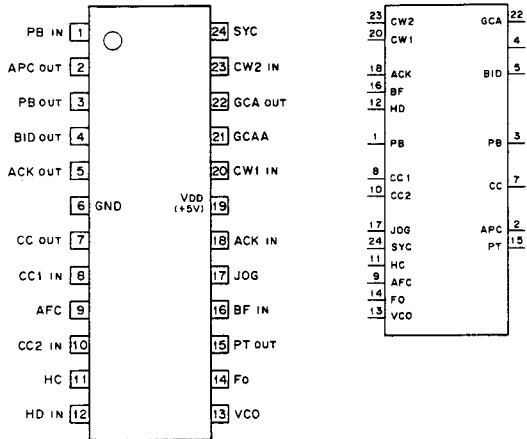


DET : DETECTOR
TC : TIME CONSTANT
TCH : TIME CONSTANT HOLD
VCA : VOLTAGE CONTROLLED AMP

CX20115A (SONY) FLAT PACKAGE
MOTOR SENSE AMP
— TOP VIEW —



CX20117 (SONY) FLAT PACKAGE
C-MOS PAL-COLOR ALIGNMENT COMPENSATOR
— TOP VIEW —



INPUT

ACK : ACK CHROMA SIGNAL
BF : BURST FLAG
CW1 : 4.43 MHz (REF - 90°)
CW2 : REF 4.43 MHz
HD : HORIZONTAL DRIVE
PB : PLAYBACK CHROMA SIGNAL
CC1 : CONVERTED CARRIER (3.70 MHz)
CC2 : CONVERTED CARRIER (5.17 MHz)

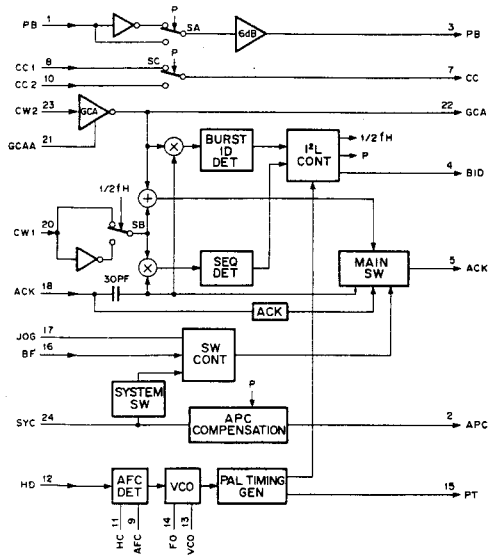
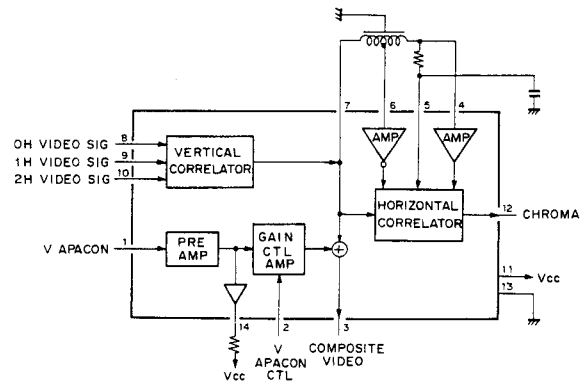
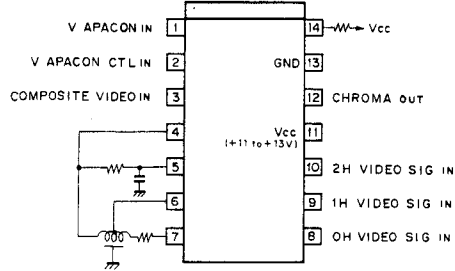
OTHERS

AFC : AFC LPF
GCAA : REF AMP GAIN ADJ
F0 : VCO FREQUENCY ADJ
HC : HOLD CAPACITOR
JOG : REC/PB/JOG SELECT
SYNC : SYSTEM CONTROL
VCO : VCO CAPACITOR

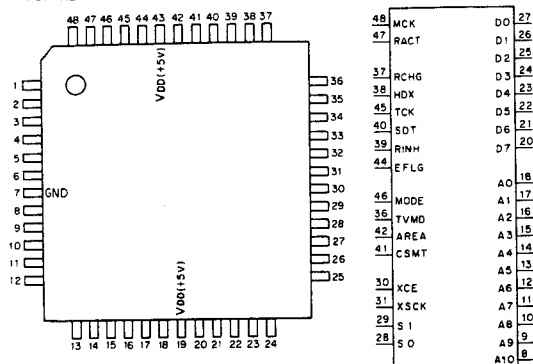
OUTPUT

ACK : ACK CHROMA SIGNAL
APC : APC COMPENSATION
BID : BURST ID
GCA : REF (4.43 MHz) AMP
PB : PLAYBACK CHROMA SIGNAL
PT : PAL TIMING
CC : CONDERTED CARRIER OTHERS

CX22013 (SONY)
DYNAMIC COMB FILTER
— TOP VIEW —



CX23011 (SONY) FLAT PACKAGE
C-MOS PCM AUDIO SIGNAL PROCESSOR
- TOP VIEW -



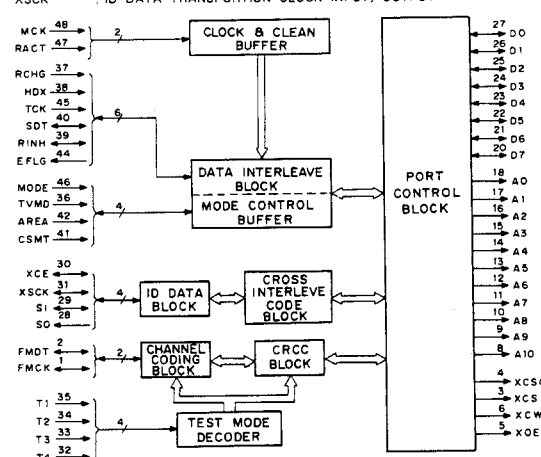
(V_{DD} = +5V)

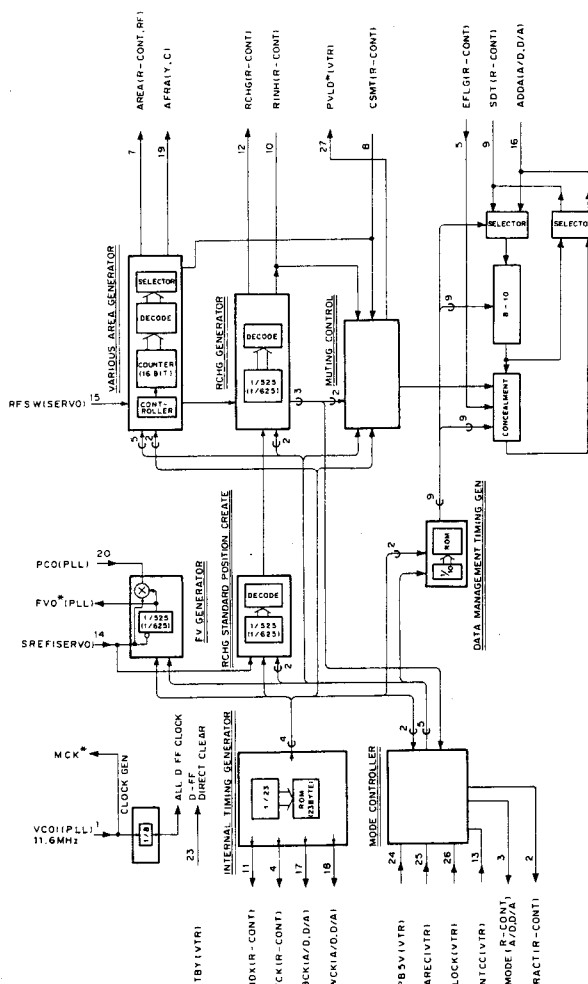
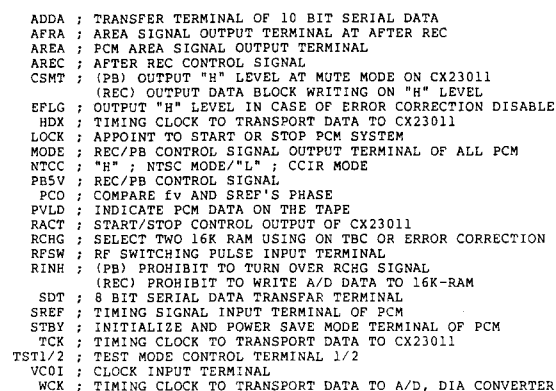
| PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL |
|---------|-----|-----------------|---------|-----|-----------------|
| 1 | I/O | FMCK | 25 | I/O | D2 |
| 2 | I/O | FMDT | 26 | I/O | D1 |
| 3 | O | XCS1 | 27 | I/O | D0 |
| 4 | O | XCS0 | 28 | O | S0 |
| 5 | O | XOE | 29 | I/O | S1 |
| 6 | O | XW | 30 | I/O | XCE |
| 7 | - | GND | 31 | I/O | XSCK |
| 8 | O | A10 | 32 | I | T4 |
| 9 | O | A9 | 33 | I | T3 |
| 10 | O | A8 | 34 | I | T2 |
| 11 | O | A7 | 35 | I | T1 |
| 12 | O | A6 | 36 | I | TVMD |
| 13 | O | A5 | 37 | I | RCHG |
| 14 | O | A4 | 38 | I | HDG |
| 15 | O | A3 | 39 | I/O | RINH |
| 16 | O | A2 | 40 | I/O | SDT |
| 17 | O | A1 | 41 | I/O | CSMT |
| 18 | O | A0 | 42 | I | AREA |
| 19 | - | V _{DD} | 43 | - | V _{DD} |
| 20 | I/O | D7 | 44 | O | EFLG |
| 21 | I/O | D6 | 45 | I | TCK |
| 22 | I/O | D5 | 46 | I | MODE |
| 23 | I/O | D4 | 47 | I | RACT |
| 24 | I/O | D3 | 48 | I | MCK |

INPUT
AREA : PCM AREA SIGNAL INPUT TERMINAL
HDG : TIMING CLOCK TO TRANSPORT DATA TO CX23012
MCK : NTSC/CCIR CLOCK INPUT
MODE : REC/PB CONTROL SIGNAL INPUT TERMINAL OF ALL PCM
RACT : START/STOP CONTROL INPUT OF CX23012
RCHG : SELECT TWO 16K-RAM USING ON TBC OR ERROR CORRECTION
TCK : TIMING CLOCK TO TRANSPORT DATA TO CX23012
TVMD : NTSC/CCIR STATUS SIGNAL INPUT
T1 - T4 : TEST MODE INPUTS

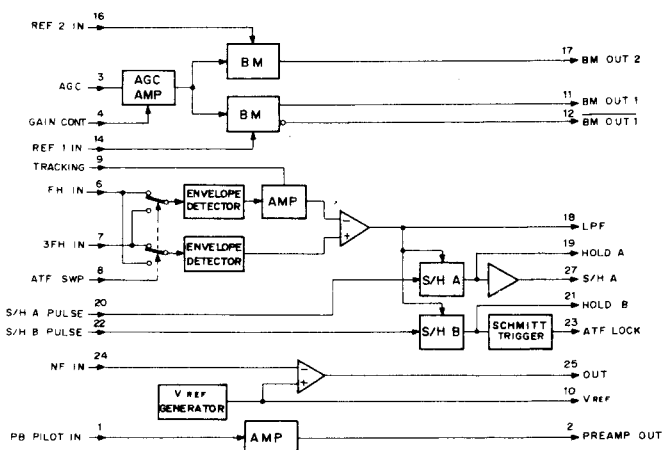
OUTPUT
A0 - A10 : RAM ADDRESS OUTPUTS
EFLG : OUTPUT HIGH LEVEL IN CASE OF ERROR CORRECTION DISABLE
S0 : ID DATA OUTPUT
XCS0, XCS1 : TWO 16K-RAM SELECT CONTROL OUTPUTS
XOE : 16K-RAM CONTROL OUTPUT
XW : 16K-RAM WRITING OUTPUT

INPUT/OUTPUT
CSMT : (PB) OUTPUT HIGH LEVEL AT MUTE MODE ON CX23012
DO - D7 : (REC) INPUT DATA BLOCK WRITING ON HIGH LEVEL
FMCK : FM CLOCK INPUT/OUTPUT
FMDT : FM DATA INPUT/OUTPUT
RINH : (PB) PROHIBIT TO TURN OVER RCHG SIGNAL
SDT : (REC) PROHIBIT TO WRITE A/D DATA TO 16K-RAM
SI : 8 BIT SERIAL DATA TRANSFER TERMINAL
XCE : ID DATA INPUT/OUTPUT
XSCK : ID DATA TRANSPORTATION SIGNAL INPUT/OUTPUT





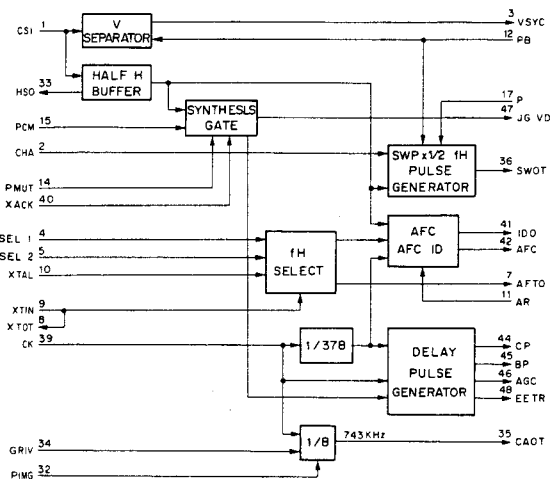
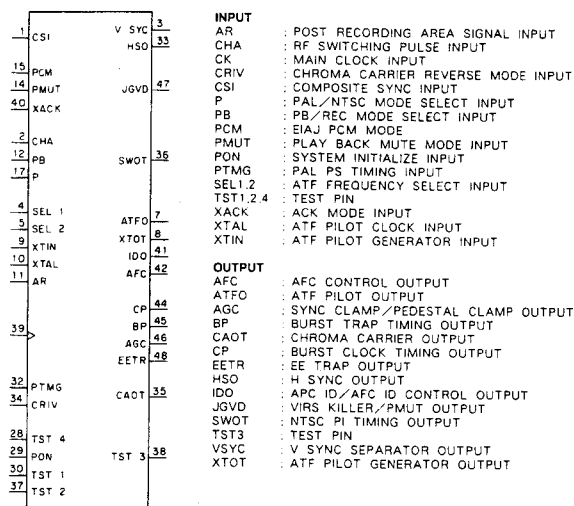
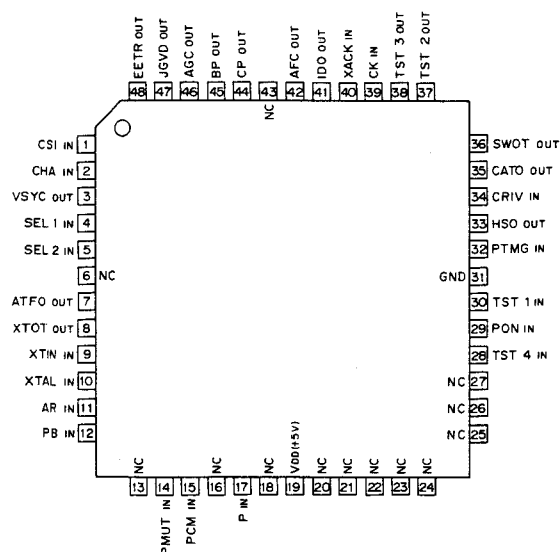
CXA1042M (SONY) FLAT PACKAGE
AUTOMATIC TRACKING SENSOR
- TOP VIEW -



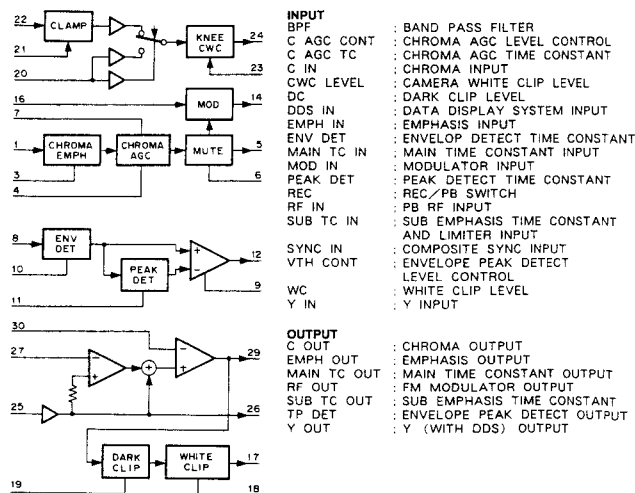
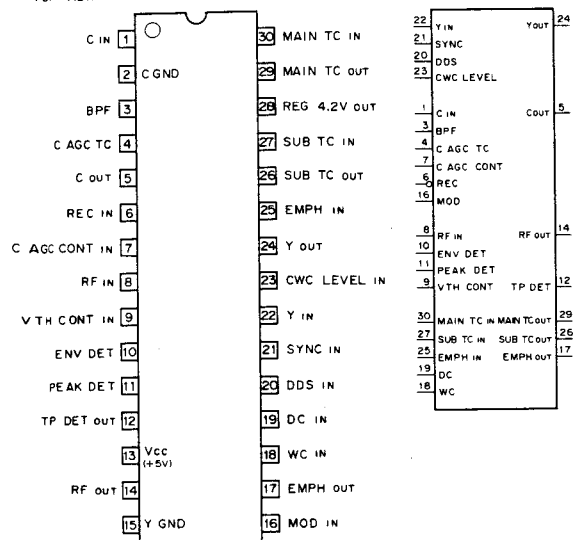
| | | |
|------------------|---|------------------------------------|
| OUTPUT | : | |
| ATF LOCK | : | LOCK DETECT SIGNAL OUTPUT |
| BM OUT1 | : | MULTIPLIER'S NEGATIVE PHASE OUTPUT |
| BM OUT1 | : | MULTIPLIER'S POSITIVE PHASE OUTPUT |
| BM OUT2 | : | MULTIPLIER'S POSITIVE PHASE OUTPUT |
| OUT | : | OP AMP POSITIVE PHASE OUTPUT |
| PRE AMP OUT | : | PRE AMP OUTPUT |
| S/H A OUT | : | SAMPLE HOLD A PULSE SIGNAL OUTPUT |
| V _{REF} | : | REF VOLTAGE OUTPUT |

OTHERS
ATF SWP : SUBTRACTOR'S POLARITY CHANGE
HOLD A. B : S/H PULSE TIME CONSTANT HOLD
LPF : ENVELOPE DETECTION
TRACKING : TRACKING ADJUSTMENT

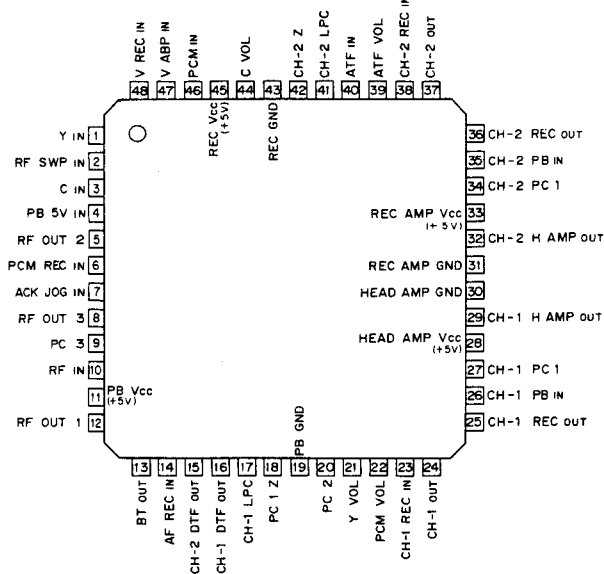
CX23054 (SONY) FLAT PACKAGE
C-MOS PCM/CHROMA SYNC PROCESSOR
- TOP VIEW -



CXA1047M (SONY)
VIDEO Y/C REC PROCESSOR
- TOP VIEW -



CXA1234AR (SONY) FLAT PACKAGE

VIDEO RF REC/PB AMPLIFIER
- TOP VIEW -

INPUT

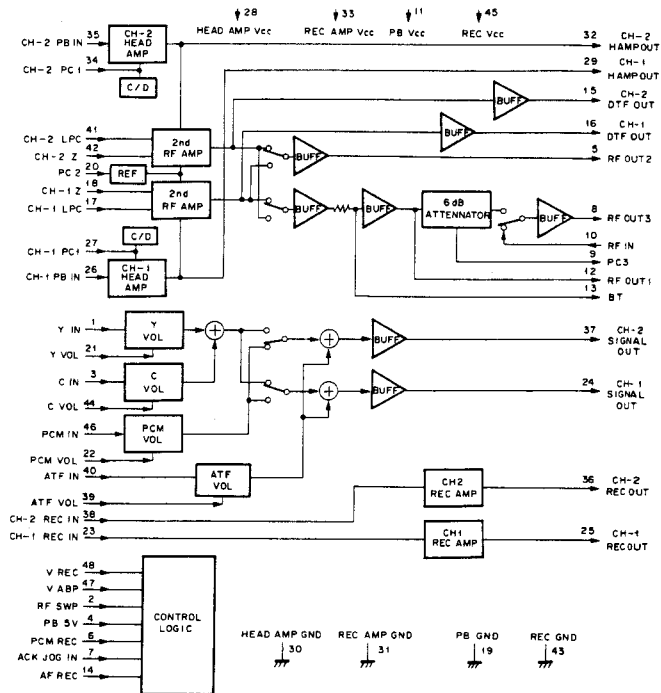
ACK JOG IN : VIDEO/RF SELECT FOR RF OUT 3
 AF REC : AFTER RECODING MODE
 ATF IN : REC ATF SIGNAL INPUT
 ATF VOL : REC ATF GAIN CONTROL
 C IN : REC CHROMA INPUT
 CH-1 PB IN : CH-1 HEAD AMP INPUT
 CH-1 REC IN : CH-1 REC AMP INPUT
 CH-2 PB IN : CH-2 HEAD AMP INPUT
 CH-2 REC IN : CH-2 REC AMP INPUT
 C VOL : REC CHROMA GAIN CONTROL
 PB 5V : PB ON/OFF CONTROL
 PCM IN : REC PCM SIGNAL INPUT
 PCM REC : PCM AUDIO RECORDING MODE
 PCM VOL : REC PCM GAIN CONTROL
 RF IN : VIDEO INPUT FOR RF OUT 3
 RF SWP IN : RF SWITCHING PULSE INPUT
 V ABP IN : OVER LAP RECORDING MODE INPUT
 V REC IN : VIDEO RECORDING MODE INPUT
 Y IN : REC Y INPUT
 Y VOL : REC Y GAIN CONTROL

OUTPUT

BT : BIAS TRAP FILTER
 CH-1 OUT : REC CH-1 OUTPUT
 CH-1 DTF OUT : DTF CH-1 OUTPUT
 CH-1 H AMP OUT : CH-1 HEAD AMP OUTPUT
 CH-1 REC OUT : CH-1 REC AMP OUTPUT
 CH-2 OUT : REC CH-2 OUTPUT
 CH-2 DTF OUT : DTF CH-2 OUTPUT
 CH-2 H AMP OUT : CH-2 HEAD AMP OUTPUT
 CH-2 REC OUT : CH-2 REC AMP OUTPUT
 RF OUT 1 : RF OUTPUT FOR VIDEO
 RF OUT 2 : RF OUTPUT FOR PCM
 RF OUT 3 : RF OUTPUT

OTHERS

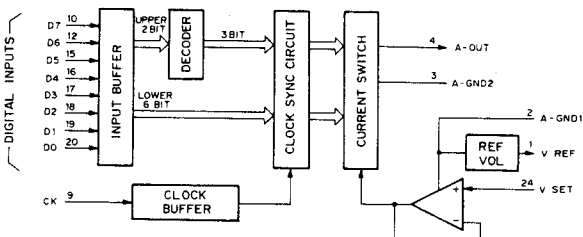
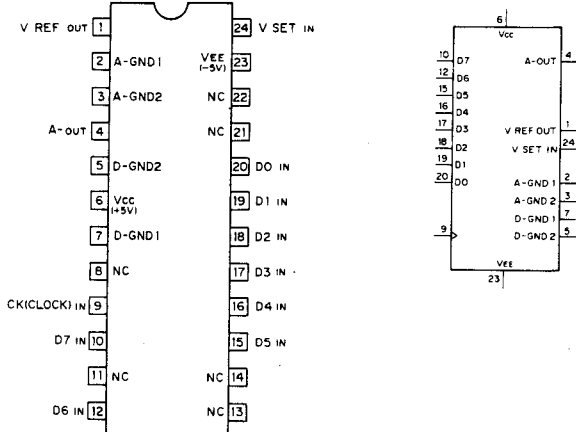
CH-1 LPC : BYPASS CAPACITOR FOR CH-1 HEAD AMP
 CH-1 PC1 : BYPASS CAPACITOR FOR CH-1 HEAD AMP
 CH-1 Z : LCR RESONANCE CIRCUIT
 CH-2 LPC : BYPASS CAPACITOR FOR CH-2 2nd RF AMP
 CH-2 PC1 : BYPASS CAPACITOR FOR CH-2 HEAD AMP
 CH-2 Z : LCR RESONANCE CIRCUIT
 PC 2 : BYPASS CAPACITOR
 PC 3 : BYPASS CAPACITOR FOR ATTENUATOR



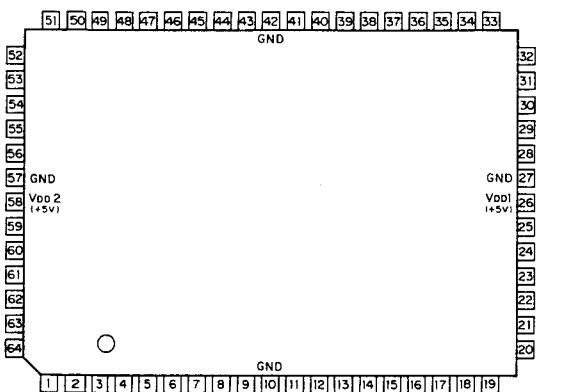
CXA1106M (SONY) FLAT PACKAGE

8-BIT D/A CONVERTER (TTL INPUT)

- TOP VIEW -



CXD1095Q (SONY) FLAT PACKAGE
C-MOS I/O PORT EXPANDER
— TOP VIEW —

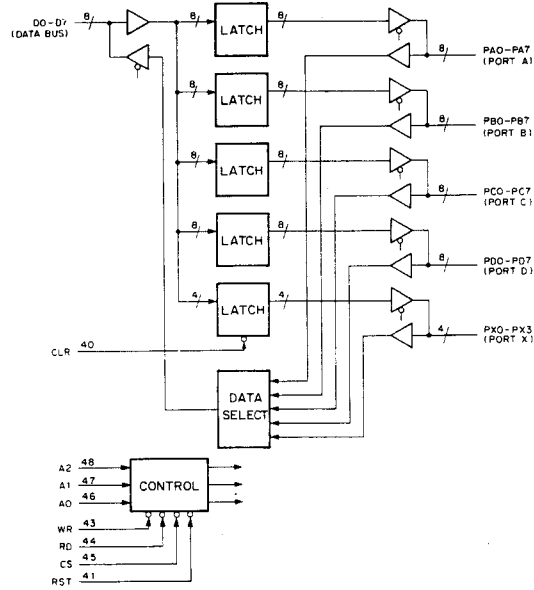


| PIN NO. | IN | OUT | SYMBOL | PIN NO. | IN | OUT | SYMBOL | PIN NO. | IN | OUT | SYMBOL | PIN NO. | IN | OUT | SYMBOL |
|---------|----|-----|--------|---------|----|-----|----------|---------|----|-----|--------|---------|----|-----|----------|
| 1 | | | NC | 17 | O | O | PC6 | 33 | | | NC | 49 | O | O | PX0 |
| 2 | | | NC | 18 | O | O | PC7 | 34 | | | NC | 50 | O | O | PX1 |
| 3 | O | O | PB1 | 19 | | | NC | 35 | O | O | D3 | 51 | | | NC |
| 4 | O | O | PB2 | 20 | O | O | PD0 | 36 | O | O | D4 | 52 | O | O | PX2 |
| 5 | O | O | PB3 | 21 | O | O | PD1 | 37 | O | O | D5 | 53 | O | O | PX3 |
| 6 | O | O | PB4 | 22 | O | O | PD2 | 38 | O | O | D6 | 54 | O | O | PA0 |
| 7 | O | O | PB5 | 23 | O | O | PD3 | 39 | O | O | D7 | 55 | O | O | PA1 |
| 8 | O | O | PB6 | 24 | O | O | PD4 | 40 | O | | CLR | 56 | O | O | PA2 |
| 9 | O | O | PB7 | 25 | | | GND | 41 | O | | RST | 57 | | | GND |
| 10 | | | GND | 26 | O | | VDD(+5V) | 42 | | | GND | 58 | O | | VDD(+5V) |
| 11 | O | O | PC0 | 27 | O | O | PD5 | 43 | O | | WR | 59 | O | O | PA3 |
| 12 | O | O | PC1 | 28 | O | O | PD6 | 44 | O | | RD | 60 | O | O | PA4 |
| 13 | O | O | PC2 | 29 | O | O | PD7 | 45 | O | | CS | 61 | O | O | PA5 |
| 14 | O | O | PC3 | 30 | O | O | D0 | 46 | O | | A0 | 62 | O | O | PA6 |
| 15 | O | O | PC4 | 31 | O | O | D1 | 47 | O | | A1 | 63 | O | O | PA7 |
| 16 | O | O | PC5 | 32 | O | O | D2 | 48 | O | | A2 | 64 | O | O | PB0 |

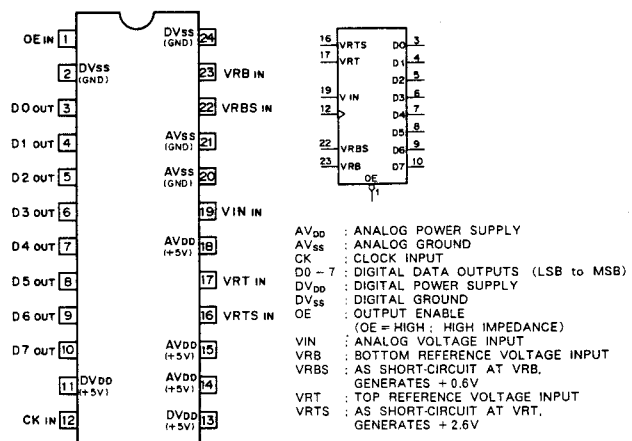
| PIN NO. | IN | OUT | SYMBOL | PIN NO. | IN | OUT | SYMBOL | PIN NO. | IN | OUT | SYMBOL | PIN NO. | IN | OUT | SYMBOL |
|---------|----|-----|--------|---------|----|-----|----------|---------|----|-----|--------|---------|----|-----|----------|
| 1 | | | NC | 17 | O | O | PC6 | 33 | | | NC | 49 | O | O | PX0 |
| 2 | | | NC | 18 | O | O | PC7 | 34 | | | NC | 50 | O | O | PX1 |
| 3 | O | O | PB1 | 19 | | | NC | 35 | O | O | D3 | 51 | | | NC |
| 4 | O | O | PB2 | 20 | O | O | PD0 | 36 | O | O | D4 | 52 | O | O | PX2 |
| 5 | O | O | PB3 | 21 | O | O | PD1 | 37 | O | O | D5 | 53 | O | O | PX3 |
| 6 | O | O | PB4 | 22 | O | O | PD2 | 38 | O | O | D6 | 54 | O | O | PA0 |
| 7 | O | O | PB5 | 23 | O | O | PD3 | 39 | O | O | D7 | 55 | O | O | PA1 |
| 8 | O | O | PB6 | 24 | O | O | PD4 | 40 | O | | CLR | 56 | O | O | PA2 |
| 9 | O | O | PB7 | 25 | | | GND | 41 | O | | RST | 57 | | | GND |
| 10 | | | GND | 26 | O | | VDD(+5V) | 42 | | | GND | 58 | O | | VDD(+5V) |
| 11 | O | O | PC0 | 27 | O | O | PD5 | 43 | O | | WR | 59 | O | O | PA3 |
| 12 | O | O | PC1 | 28 | O | O | PD6 | 44 | O | | RD | 60 | O | O | PA4 |
| 13 | O | O | PC2 | 29 | O | O | PD7 | 45 | O | | CS | 61 | O | O | PA5 |
| 14 | O | O | PC3 | 30 | O | O | D0 | 46 | O | | A0 | 62 | O | O | PA6 |
| 15 | O | O | PC4 | 31 | O | O | D1 | 47 | O | | A1 | 63 | O | O | PA7 |
| 16 | O | O | PC5 | 32 | O | O | D2 | 48 | O | | A2 | 64 | O | O | PB0 |

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE
HI-Z: HIGH IMPEDANCE

DO-D7: DATA BUS INPUTS/OUTPUTS
CS: CHIP SELECT INPUT
RD: READ STROBE INPUT
WR: WRITE STROBE INPUT
AO-A2: ADDRESS INPUT
RST: RESET INPUT
CLR: CLEAR INPUT
PA0-PA7: PORT A INPUTS/OUTPUTS
PB0-PB7: PORT B INPUTS/OUTPUTS
PC0-PC7: PORT C INPUTS/OUTPUTS
PD0-PD7: PORT D INPUTS/OUTPUTS
PX0-PX3: PORT X INPUTS/OUTPUTS

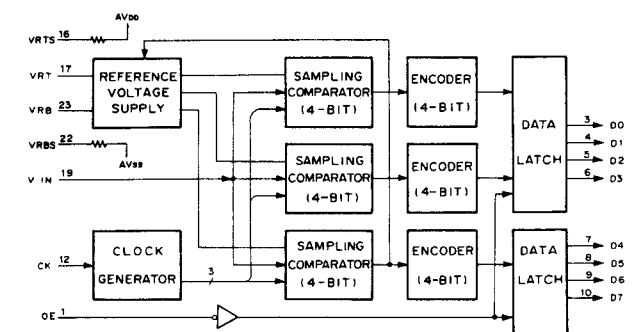


CXD1175M (SONY) FLAT PACKAGE
C-MOS 8-BIT 20MSPS VIDEO A/D CONVERTER
— TOP VIEW —

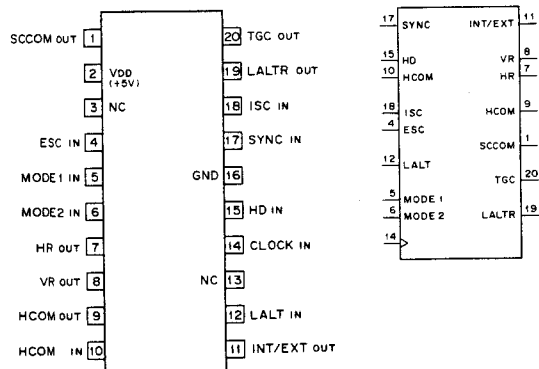


| STEP | INPUT SIGNAL VOLTAGE | D7 | D6 | D5 | D4 | D3 | D2 | D1 | D0 |
|------|----------------------|----|----|----|----|----|----|----|----|
| 0 | 0V (VRT) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0.01V | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| 127 | 1.34V | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 128 | 1.35V | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 255 | 2.7V (VRB) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

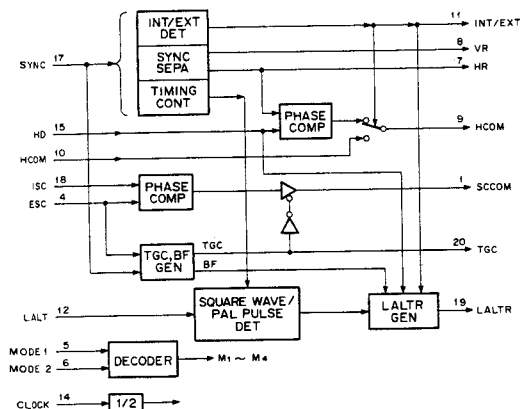
0: LOW LEVEL
1: HIGH LEVEL



CXD1216M (SONY) FLAT PACKAGE

C-MOS GENLOCK DRIVER
- TOP VIEW -

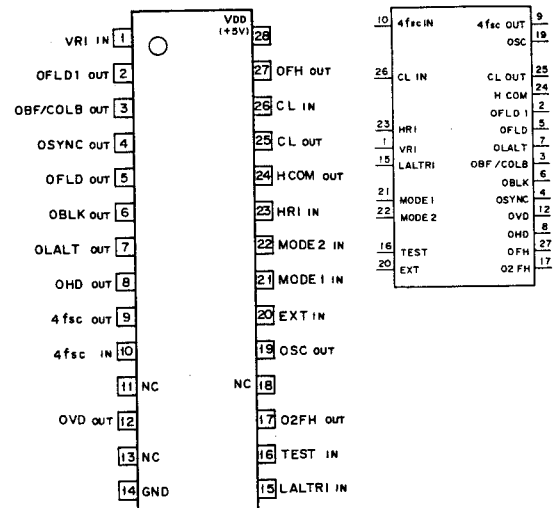
| INPUT | MODE | SYSTEM |
|-------------|------|--|
| MODE1 MODE2 | | |
| 0 0 | M1 | PAL-VBS |
| 1 0 | M2 | PALM-VBS |
| 0 1 | M3 | PAL-SECAM-VS/SC/LALT |
| 1 1 | M4 | NTSC-VBS,NTSC-VS/SC PALM-VS/SC/LALT |

0: LOW LEVEL
1: HIGH LEVEL

INPUT
CLOCK : 4fsc INPUT
ESC : SC/COLOR BURST
HCOM : PHASE COMPARE FROM CXD1217
HD : H DRIVE FROM CXD1217
ISC : SUBCARRIER FROM CXD1217
LALT : LALT FROM REFERENCE SIGNAL GENERATOR
MODE1,2 : SYSTEM SELECT
SYNC : SYNC FROM REFERENCE SIGNAL GENERATOR

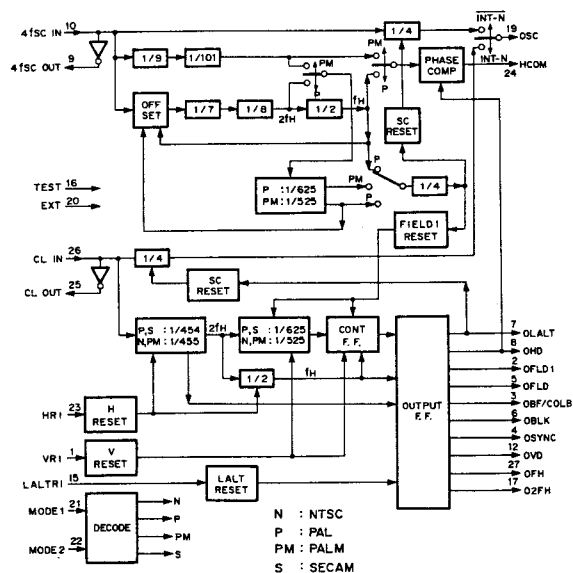
OUTPUT
HCOM : PHASE COMPARE HR WITH HD
HR : t_H OF SYNC SEPARATE
INT/EXT : INTERNAL/EXTERNAL SPECIFIED
LALTR : LINE CHANGE RESET
SCCOM : PHASE COMPARE ESC WITH ISC
TGC : TRISTATE CONTROL
VR : t_V OF SYNC SEPARATE

CXD1217M (SONY) FLAT PACKAGE

C-MOS SYNC GENERATOR
- TOP VIEW -

| SYSTEM | 4fsc | CLOCK |
|--------|-----------------|-------------|
| NTSC | 910 μ s | 910 μ s |
| PAL | 1135 μ s+2N | 908 μ s |
| PALM | 909 μ s | 910 μ s |
| SECAM | — | 908 μ s |

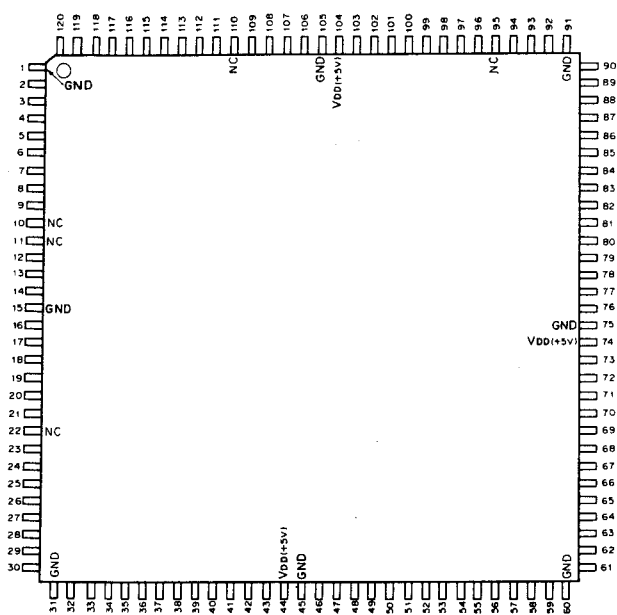
| INPUT | SYSTEM |
|-------------|--------|
| MODE1 MODE2 | |
| 0 0 | NTSC |
| 0 1 | SECAM |
| 1 0 | PALM |
| 1 1 | PAL |

0: LOW LEVEL
1: HIGH LEVEL

INPUT
4fsc IN : 4fsc INPUT
CL IN : CLOCK INPUT
EXT : SYNC MODE SELECT
(L: INTERNAL/H: EXTERNAL)
HRI : H RESET
LALTRI : LINE CHANGE RESET
MODE 1,2 : SYSTEM SELECT
VRI : V RESET

OUTPUT
4fsc OUT : 4fsc OUTPUT
CL OUT : CLOCK OUTPUT
HCOM : PHASE COMPARE
O2FH : 2FH OUTPUT
OBF/COLB : BURST FLAG/COLOR BLANKING
OBLK : COMPOSITE BLANKING
OFH : H FREQUENCY
OFLD : EVEN, ODD
OFLD1 : FIELD1
OLALT : LINE CHANGE
OSC : SUBCARRIER
OSYNC : COMPOSITE SYNC
OVD : V DRIVE

CXD1226Q (SONY) FLAT PACKAGE

C-MOS DIGITAL CHROMA DECODER/Y, C FIELD NOISE REDUCER
- TOP VIEW -

| PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL |
|---------|-----|----------|---------|-----|----------|---------|-----|----------|---------|-----|----------|
| 1 | - | GND | 31 | - | GND | 61 | - | GND | 91 | - | GND |
| 2 | I | CSR0 | 32 | I | CMCK | 62 | O | MPL | 92 | I | YMCK |
| 3 | I | CSR1 | 33 | I | DOP | 63 | O | LIMO | 93 | I | PINV |
| 4 | I | CSR2 | 34 | I | USC0 | 64 | I | SW1 | 94 | I | NRFD |
| 5 | I | CSR3 | 35 | I | JP10 | 65 | I | MTST | 95 | - | NC |
| 6 | O | CMW0 | 36 | I | JP11 | 66 | O | FSC | 96 | I | AHD |
| 7 | O | CMW1 | 37 | I | YSYS | 67 | I | INFS | 97 | I | CHD |
| 8 | O | CMW2 | 38 | I | PHEN | 68 | I | MPXT | 98 | I | YHD |
| 9 | O | CMW3 | 39 | I | PD | 69 | I | MMTC | 99 | I | WEVN |
| 10 | - | NC | 40 | O | PED0 | 70 | I | EXFS | 100 | I | OFSB |
| 11 | - | NC | 41 | O | PED1 | 71 | I | CS0 | 101 | I | SADM |
| 12 | I | YSR0 | 42 | O | PED2 | 72 | I | CS1 | 102 | I | CLR |
| 13 | I | YSR1 | 43 | O | PED3 | 73 | I | WY7 | 103 | O | CMPT |
| 14 | - | VDD(+5V) | 44 | - | VDD(+5V) | 74 | - | VDD(+5V) | 104 | - | VDD(+5V) |
| 15 | - | GND | 45 | - | GND | 75 | - | GND | 105 | - | GND |
| 16 | I | YSR2 | 46 | O | COCK | 76 | I | WY6 | 106 | O | RBT |
| 17 | I | YSR3 | 47 | O | VCOO | 77 | I | WY5 | 107 | O | ACK |
| 18 | O | YMW0 | 48 | I | VCOI | 78 | I | WY4 | 108 | I | YDLY |
| 19 | O | YMW1 | 49 | O | OUT0 | 79 | I | WY3 | 109 | I | CTH |
| 20 | O | YMW2 | 50 | I | IMO | 80 | I | WY2 | 110 | - | NC |
| 21 | O | YMW3 | 51 | O | OUT1 | 81 | I | WY1 | 111 | I | FNR |
| 22 | - | NC | 52 | I | IM1 | 82 | I | WY0 | 112 | I | WVMT |
| 23 | I | YSR4 | 53 | - | AG | 83 | I | WCY7 | 113 | I | WCDT |
| 24 | I | YSR5 | 54 | O | OUT2 | 84 | I | WCY6 | 114 | I | WUV0 |
| 25 | I | YSR6 | 55 | I | IM2 | 85 | I | WCY5 | 115 | I | WUV1 |
| 26 | I | YSR7 | 56 | I | LIMI | 86 | I | WCY4 | 116 | I | YEV0 |
| 27 | O | YMW4 | 57 | O | BPE0 | 87 | I | WCY3 | 117 | I | YEV1 |
| 28 | O | YMW5 | 58 | O | BPE1 | 88 | I | WCY2 | 118 | I | YEV2 |
| 29 | O | YMW6 | 59 | O | BPE2 | 89 | I | WCY1 | 119 | I | CEV0 |
| 30 | O | YMW7 | 60 | O | BPE3 | 90 | I | WCY0 | 120 | I | CEV1 |

* 1 CHROMA SYSTEM MODE SELECTION

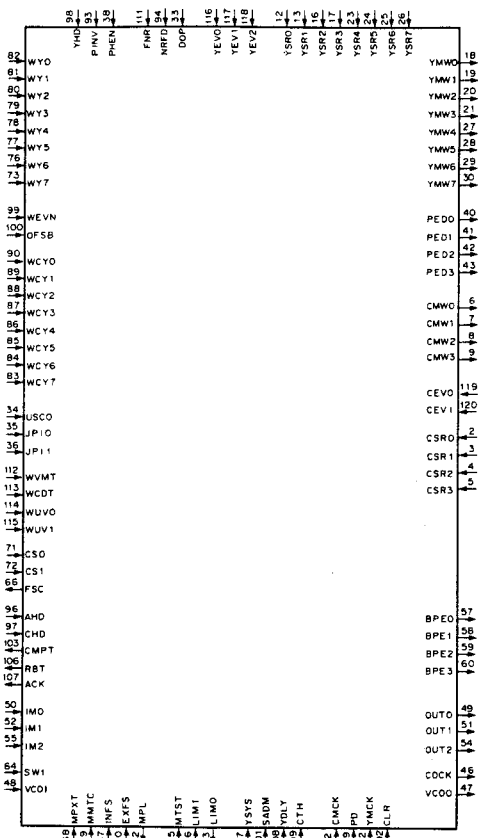
| CS1 | CS0 | MODE |
|-----|-----|------------------------|
| 0 | 0 | NTSC |
| 0 | 1 | PAL |
| 1 | 0 | CHROMA BASE BAND INPUT |
| 1 | 1 | PROHIBITION |

* 3 CHROMA SIGNAL NOISE REDUCER SELECTION

| CEV0 | CEV1 | OPERATION |
|------|------|------------------------|
| 0 | 0 | NOISE REDUCER (SOFT) |
| 0 | 1 | NOISE REDUCER (MIDDLE) |
| 1 | 0 | NOISE REDUCER (STRONG) |
| 1 | 1 | NO OPERATION |

* 2 Y SIGNAL NOISE REDUCER SELECTION

| YEV0 | YEV1 | YEV2 | OPERATION |
|------|------|------|------------------------|
| 0 | 0 | 0 | NOISE REDUCER (SOFT) |
| 0 | 0 | 1 | NOISE REDUCER (MIDDLE) |
| 0 | 1 | 0 | NOISE REDUCER (STRONG) |
| 0 | 1 | 1 | AFTER IMAGE |
| 1 | 0 | 0 | VERTICAL FILTER |
| 1 | 0 | 1 | FADE IN/OUT |
| 1 | 1 | 0 | SELECT AFTER IMAGE |
| 1 | 1 | 1 | NO OPERATION |

0 : LOW LEVEL
1 : HIGH LEVEL

INPUT

AG : ANALOG GND

AHD : H SYNC INPUT FOR APC

* 3 CEV0, 1 : C NOISE REDUCER MODE SELECT INPUTS

CHD : H SYNC INPUT FOR BURST DETECT

CLR : DIRECT CLEAR INPUT

CMCK : CLOCK INPUT FOR CHROMA SYSTEM

CSR0 - CSR3 : CHROMA READ DATA INPUTS

* 1 CS0, 1 : CHROMA SYSTEM SELECT INPUTS

DOP : DROPOUT COMPENSATION PULSE INPUT

EXFS : EXTERNAL FSC INPUT

FNR : NOISE REDUCER ON/OFF CONTROL INPUT

IMO - IM2 : AUDIO RANGE AMP INPUTS

INFS : INTERNAL FSC INPUT

JP10, 1 : ID CODE MONITOR INPUTS (D2, D3)

LIMI : WINDOW COMPARATOR INPUT

MMTC, MPXT, MTST, PD : TEST PIN

NRFD : Y FIELD NOISE REDUCER DATA INPUT

OFSB : OFF SET BINARY MODE INPUT

PHEN : CHROMA APC SYSTEM CONTROL INPUT

PINV : PEDESTAL CLAMP ERROR INVERT INPUT

SADM : Y/C SIGNAL H, COMPOSITE SIGNAL SELECT INPUT

SW1 : AUDIO RANGE SWITCH INPUT

USC0 : USER CODE FOR OPTION

VCOI : VCO INPUT

WCDT : WRITE FRAMING CODE TIMING INPUT

WCY0 - WCY7 : L CHROMA SIGNAL, H : COMPOSITE SIGNAL INPUTS

WEVN : WRITE EVEN/ODD FIELD MONITOR INPUT

WUV0, 1 : WRITE U/V TIMING INPUTS

WVMT : WRITE VIDEO MUTE

WY0 - WY7 : WRITE Y SIGNAL INPUTS

YDLY : Y DELAY ADJUST INPUT

* 2 YEV0 - YEV2 : Y NOISE REDUCER MODE SELECT INPUTS

YHD : Y H DRIVE PULSE INPUT

YMCK : Y MEMORY CONTROL CLOCK INPUT

YSR0 - YSR7 : Y MEMORY DATA INPUTS

YSYS : Y DELAY ADJUST INPUT

(H : 3.58MHz C SYSTEM, L : 4.43MHz C SYSTEM)

OUTPUT

ACK : CLOCK OUTPUT FOR APC

(H : B/W MODE, L : COLOR MODE)

BPE0 - BPE3 : PHASE ERROR OUTPUTS FOR APC

(OFFSET BINARY OUTPUTS)

CMPT : MONITOR TERMINAL FOR TEST

CMW0 - CMW3 : CHROMA WRITE DATA OUTPUTS

COCK : VCO OUT CLOCK OUTPUT

FSC : 1/4 CLOCK OUTPUT

LIMO : WINDOW COMPARATOR OUTPUT

MPL : PHASE COMPARATOR ERROR OUTPUT

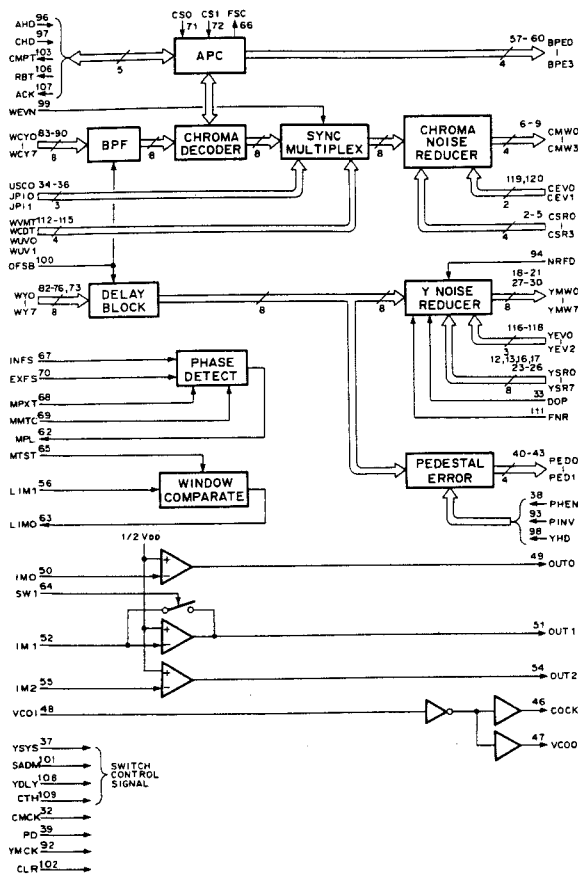
OUT0 - OUT2 : AUDIO RANGE AMP OUTPUTS

PED0 - PED3 : PEDESTAL CLAMP ERROR OUTPUTS

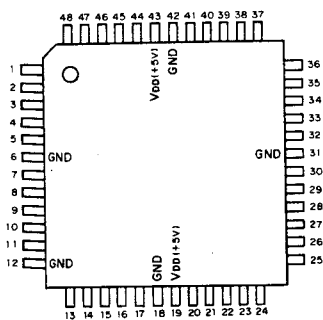
RBT : MONITOR PIN FOR TEST

VCOO : VCO OUTPUT

YMW0 - YMW7 : Y MEMORY DATA OUTPUTS



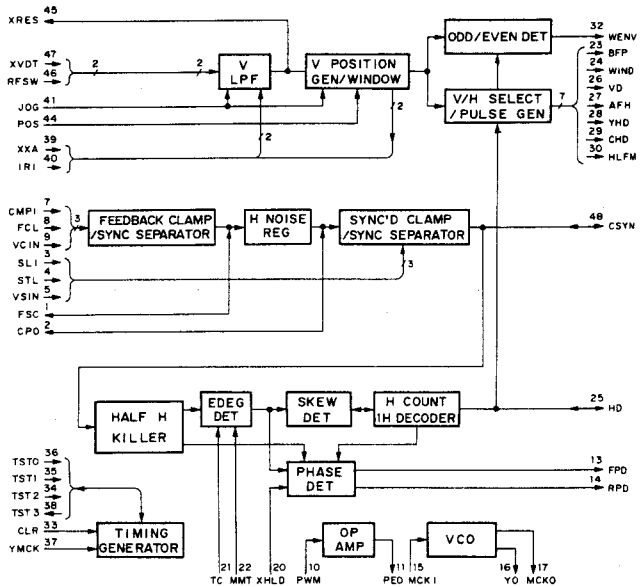
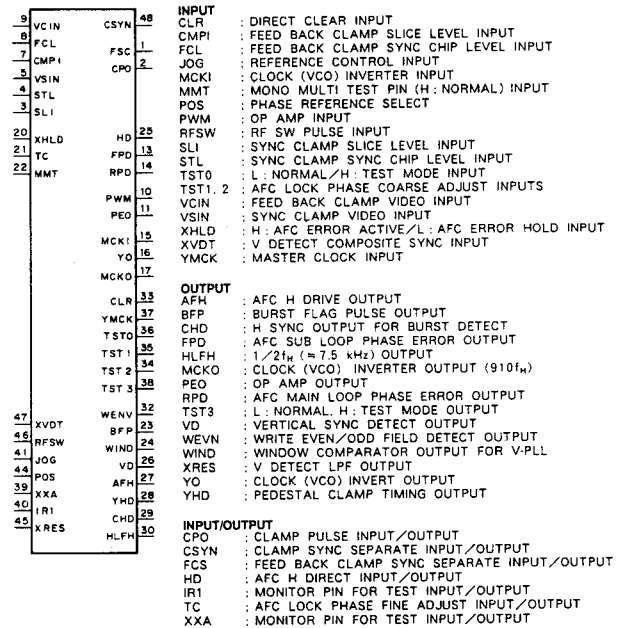
CXD1229Q (SONY) FLAT PACKAGE
C-MOS AUTOMATIC FREQUENCY CONTROL (AFC) / SYNC SEPARATOR
- TOP VIEW -



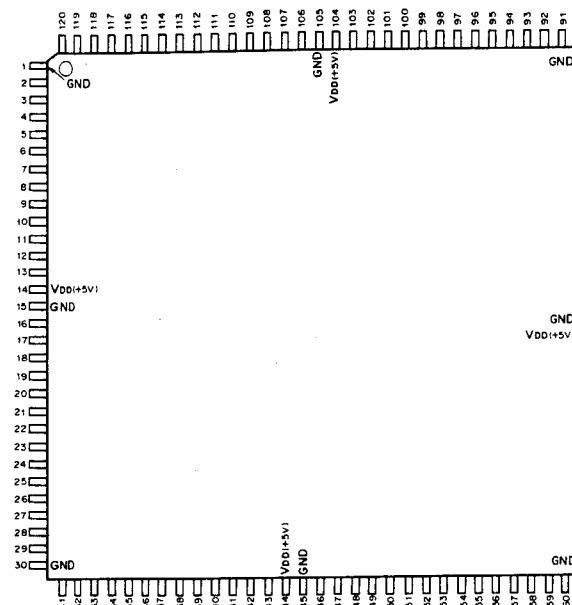
PIN ASSIGNMENT

(V_{DD} = +5V)

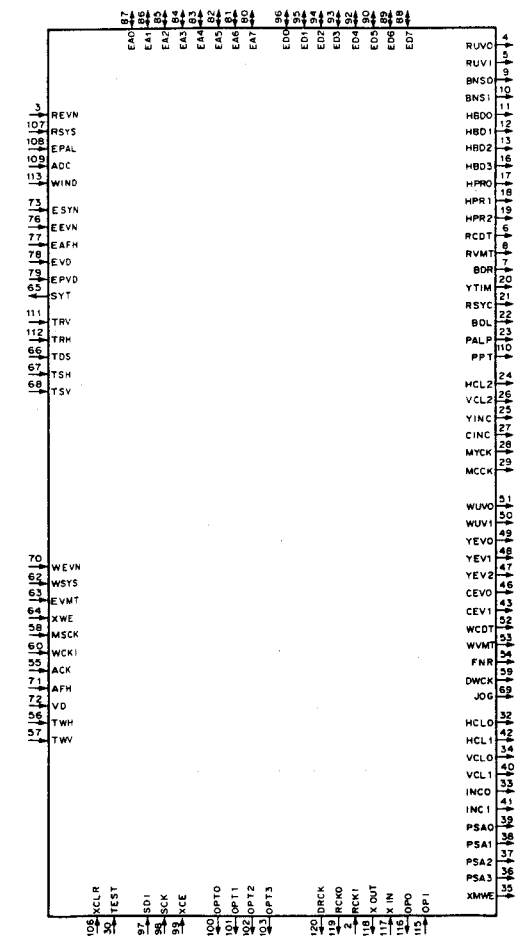
| PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL |
|---------|-----|--------|---------|-----|-----------------|---------|-----|--------|---------|-----|-----------------|
| 1 | I/O | FCS | 13 | O | FPD | 25 | O | HD | 37 | I | YMCK |
| 2 | I/O | CPO | 14 | O | RPD | 26 | O | VD | 38 | O | TST3 |
| 3 | I | SLI | 15 | I | MCKI | 27 | O | AFH | 39 | I/O | XXA |
| 4 | I | STL | 16 | O | YO | 28 | O | YHD | 40 | I/O | IR1 |
| 5 | I | VSIN | 17 | O | MCKO | 29 | O | CHD | 41 | I | JOG |
| 6 | - | GND | 18 | - | GND | 30 | O | HLFH | 42 | - | GND |
| 7 | I | CMPI | 19 | - | V _{DD} | 31 | - | GND | 43 | - | V _{DD} |
| 8 | I | FCL | 20 | I | XHLD | 32 | O | WEVN | 44 | I | POS |
| 9 | I | VCIN | 21 | O | TC | 33 | I | CLR | 45 | O | XRES |
| 10 | I | PWM | 22 | I | MMT | 34 | I | TST2 | 46 | I | RFSW |
| 11 | O | PEO | 23 | O | BFP | 35 | I | TST1 | 47 | I | XVDT |
| 12 | - | GND | 24 | O | WIND | 36 | I | TST0 | 48 | O | CSYN |



CXD1228Q (SONY) FLAT PACKAGE
C-MOS MEMORY ADDRESS CONTROLLER
- TOP VIEW -



| PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL |
|---------|-----|----------|---------|-----|----------|---------|-----|----------|---------|-----|----------|
| 1 | - | GND | 31 | - | GND | 61 | - | GND | 91 | - | GND |
| 2 | I | RCK1 | 32 | O | HCL0 | 62 | I | WSYS | 92 | I/O | ED4 |
| 3 | I | REVN | 33 | O | INC0 | 63 | I | EVMT | 93 | I/O | ED3 |
| 4 | O | RUV0 | 34 | O | VCL0 | 64 | I | XWE | 94 | I/O | ED2 |
| 5 | O | RUV1 | 35 | O | XMWE | 65 | O | SYT | 95 | I/O | ED1 |
| 6 | O | RCDT | 36 | O | PSA3 | 66 | I | TDS | 96 | I/O | ED0 |
| 7 | O | BDR | 37 | O | PSA2 | 67 | I | TSH | 97 | I | SD1 |
| 8 | O | RVMT | 38 | O | PSA1 | 68 | I | TSV | 98 | I | SDK |
| 9 | O | BNS0 | 39 | O | PSA0 | 69 | O | JOG | 99 | I | XCE |
| 10 | O | BNS1 | 40 | O | VCL1 | 70 | I | WEVN | 100 | O | OPT0 |
| 11 | O | HBD0 | 41 | O | INC1 | 71 | I | AFH | 101 | O | OPT1 |
| 12 | O | HBD1 | 42 | O | HCL1 | 72 | I | VD | 102 | O | OPT2 |
| 13 | O | HBD2 | 43 | O | CEV1 | 73 | I | ESYN | 103 | O | OPT3 |
| 14 | - | VDD(+5V) | 44 | - | VDD(+5V) | 74 | - | VDD(+5V) | 104 | - | VDD(+5V) |
| 15 | - | GND | 45 | - | GND | 75 | - | GND | 105 | - | GND |
| 16 | O | HBD3 | 46 | O | CEV0 | 76 | I | EEVN | 106 | I | XCLR |
| 17 | O | HPRO | 47 | O | YEV2 | 77 | I | EAFF | 107 | I | RSYS |
| 18 | O | HPR1 | 48 | O | YEV1 | 78 | I | EVD | 108 | I | EPAL |
| 19 | O | HPR2 | 49 | O | YEV0 | 79 | I | EPVD | 109 | I | ADC |
| 20 | O | YTIM | 50 | O | WUV1 | 80 | I/O | EA7 | 110 | O | PPT |
| 21 | O | RSYC | 51 | O | WUV0 | 81 | I/O | EA6 | 111 | I | TRV |
| 22 | O | BDL | 52 | O | WCOT | 82 | I/O | EA5 | 112 | I | TRH |
| 23 | O | PALP | 53 | O | WVMT | 83 | I/O | EA4 | 113 | I | WIND |
| 24 | O | HCL2 | 54 | O | FNR | 84 | I/O | EA3 | 114 | O | VPER |
| 25 | O | YINC | 55 | I | ACK | 85 | I/O | EA2 | 115 | I | OPI |
| 26 | O | VCL2 | 56 | I | TWH | 86 | I/O | EA1 | 116 | O | OPO |
| 27 | O | CINC | 57 | I | TWV | 87 | I/O | EA0 | 117 | I | XIN |
| 28 | O | MYCK | 58 | I | MSCK | 88 | I/O | ED7 | 118 | O | XOUT |
| 29 | O | MCCK | 59 | O | DWCK | 89 | I/O | ED6 | 119 | O | RCK0 |
| 30 | I | TST | 60 | I | WCK1 | 90 | I/O | ED5 | 120 | O | DRCK |



INPUT

- ACK: CLOCK INPUT FOR APC (H: B/W MODE, L: COLOR MODE)
- ADC: CHROMA ADDRESS CONTROL INPUT
- AFH: AFC H DRIVE INPUT
- EAFF: EXTERNAL SYNC MODE H DRIVE INPUT
- EEVN: EXTERNAL SYNC MODE EVEN/ODD SELECT INPUT
- EPAL: EXTERNAL SYNC MODE PAL COLOR ID INPUT
- EPVD: REFERENCE VD
- ESYN: EXTERNAL SYNC MODE CHROMA SYNC INPUT
- EVD: EXTERNAL SYNC MODE V DRIVE INPUT
- EVMT: EXTERNAL VIDEO MUTE INPUT (H: MUTE, L: NORMAL)
- MSCK: MASTER CLOCK INPUT
- OPI: INVERTER INPUT
- RCK1: READ CLOCK INPUT
- REVN: READ EVEN/ODD FIELD MONITOR INPUT
- RSYS: READ SYNC SELECT INPUT (H: NTSC, L: PAL)
- SD1: SERIAL DATA INPUT
- SDK: SERIAL CLOCK INPUT
- TDS, TRH, TRV, TSH, TST, TSV, TWH, TWV: TEST PIN
- VD: VERTICAL SYNC DETECT INPUT
- WCK1: WRITE CLOCK INPUT
- WEVN: WRITE EVEN/ODD FIELD MONITOR INPUT
- WIND: WINDOW COMPARTOR INPUT FOR V-PLL
- WSYS: WRITE SYNC SELECT INPUT (H: NTSC, L: PAL)
- XCE: CHIP ENABLE INPUT
- XCLR: DIRECT CLEAR INPUT
- XIN: CLOCK INPUT
- XWE: WRITE ENABLE INPUT

*** 1 SOLORIZATION RESOLUTION**

| INPUTS | OUTPUTS |
|-----------|---------------------|
| BNS0/BNS1 | RY0 RY1 RY2 RY3 RY4 |
| 0 0 | 0 0 1 X X |
| 0 1 | 0 0 0 1 X |
| 1 0 | 0 0 0 0 1 |
| 1 1 | X X X X X |

*** 2 CHROMA SIGNAL NOISE REDUCER SELECTION**

| CEV0/CEV1 | OPERATION |
|-----------|------------------------|
| 0 0 | NOISE REDUCER (SOFT) |
| 0 1 | NOISE REDUCER (MIDDLE) |
| 1 0 | NOISE REDUCER (STRONG) |
| 1 1 | NO OPERATION |

*** 3 U-AXIS BORDER LEVEL**

| HBD1/HBD0 | LEVEL |
|-----------|---------|
| 0 0 | 20 IRE |
| 0 1 | -20 IRE |
| 1 0 | -30 IRE |
| 1 1 | 0 IRE |

*** 4 V-AXIS BORDER LEVEL**

| HBD3/HBD2 | LEVEL |
|-----------|---------|
| 0 0 | 20 IRE |
| 0 1 | -20 IRE |
| 1 0 | -30 IRE |
| 1 1 | 0 IRE |

*** 5 H-PROCESS MODE SELECTION**

| HPR2/HPR1/HPRO | OPERATION |
|----------------|--------------------|
| 0 0 0 | V-ENHANCE (SOFT) |
| 0 0 1 | V-ENHANCE (SOFT) |
| 0 1 0 | V-ENHANCE (MIDDLE) |
| 0 1 1 | V-ENHANCE (STRONG) |
| 1 0 0 | MIX RATIO H:V=1:1 |
| 1 0 1 | MIX RATIO H:V=1:3 |
| 1 1 0 | MIX RATIO H:V=3:1 |
| 1 1 1 | NO PLAY |

0: LOW LEVEL
1: HIGH LEVEL
H_T = THROUGH
H_P = 1H DELAY

OUTPUT

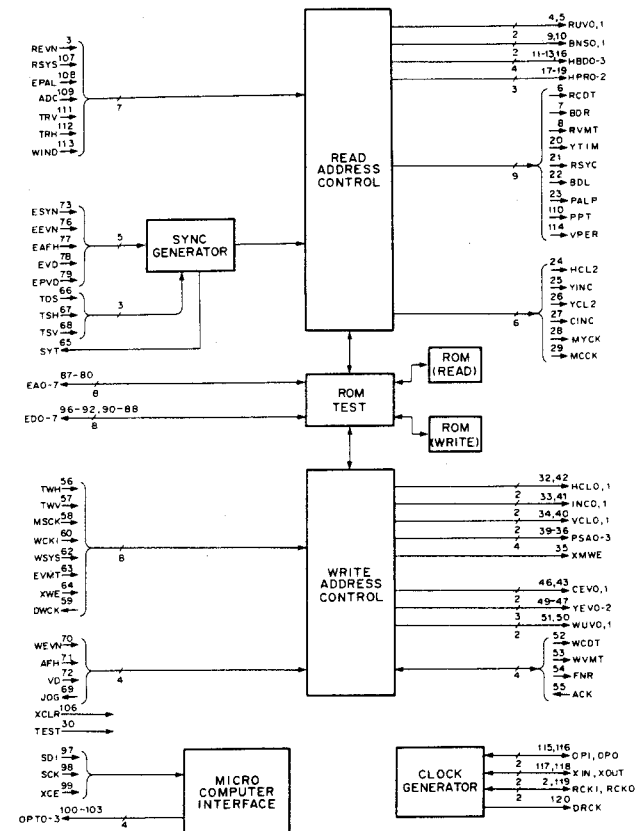
- BDR: BORDER LEVEL OUTPUT
- BNS0.1: SOLARIZATION CONTROL OUTPUTS
- CEV0.1: C NOISE REDUCER MODE SELECT OUTPUTS
- CINC: READ PORT CHROMA INCREMENT OUTPUT
- DRCK: DELAYED READ CLOCK OUTPUT
- DWCK: DELAYED WRITE CLOCK OUTPUT
- FNR: NOISE REDUCER ON/OFF CONTROL OUTPUT
- HBD0.1: U-AXIS BORDER LEVEL OUTPUTS
- HBD2.3: V-AXIS BORDER LEVEL OUTPUTS
- HCL0: WRITE PORT HORIZONTAL CLEAR OUTPUT
- HCL1.2: H-PROCESS OUTPUTS
- HPRO-HPR2: WRITE PORT LINE INCREMENT OUTPUT
- INC0: READ PORT LINE INCREMENT OUTPUT
- INC1: REFERENCE CONTROL OUTPUT
- JOG: READ PORT CHROMA CLOCK OUTPUT
- MCCK: READ PORT Y CLOCK OUTPUT
- MYCK: INVERTER OUTPUT
- OPO: OPTION OUTPUTS
- OPT0-OPT3: PAL PHASE CONTROL OUTPUT
- PALP: SMALL PICTURE TIMING OUT
- PPT: WRITE PORT TRANSFER SYNC OUTPUTS
- PSA0-PSA3: READ FRAMING CODE TIMING OUTPUT
- RCDT: READ CLOCK OUTPUT
- RCK0.1: READ U/V TIMING OUTPUTS
- RVMT: READ MUTING OUTPUT
- SD1: MONITOR PIN FOR TEST
- SYT: WRITE PORT VERTICAL CLEAR OUTPUT
- VCL0: READ PORT VERTICAL CLEAR OUTPUTS
- VCL1.2: V PHASE COMPARTOR OUTPUT
- VPER: WRITE FRAMING CODE TIMING OUTPUT
- WUV0.1: WRITE U/V TIMING OUTPUTS
- WVMT: WRITE VIDEO MUTE OUTPUT
- XMWE: WRITE PORT WRITE ENABLE OUTPUT
- XOUT: CLOCK OUTPUT
- YEV0-YEV2: Y NOISE REDUCER MODE SELECT OUTPUTS
- YINC: READ PORT Y INCREMENT OUTPUT
- YTIM: Y TIMING CONTROL OUTPUT

INPUT/OUTPUT

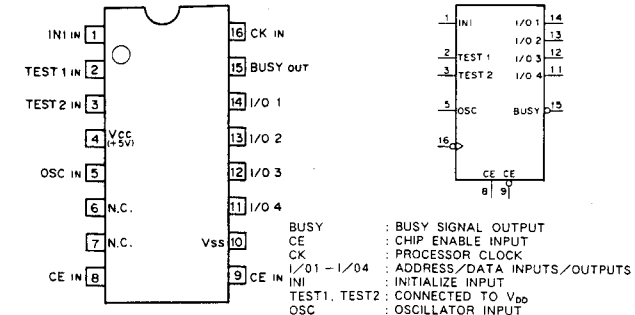
- EA0-EA7: ROM TEST TERMINAL INPUTS/OUTPUTS
- ED0-ED7: ROM TEST TERMINAL INPUTS/OUTPUTS

*** 6 Y SIGNAL NOISE REDUCER SELECTION**

| YEV0/YEV1/YEV2 | OPERATION |
|----------------|------------------------|
| 0 0 0 | NOISE REDUCER (SOFT) |
| 0 0 1 | NOISE REDUCER (MIDDLE) |
| 0 1 0 | NOISE REDUCER (STRONG) |
| 0 1 1 | AFTER IMAGE |
| 1 0 0 | VERTICAL FILTER |
| 1 0 1 | FADE IN/OUT |
| 1 1 0 | SELECT AFTER IMAGE |
| 1 1 1 | NO OPERATION |

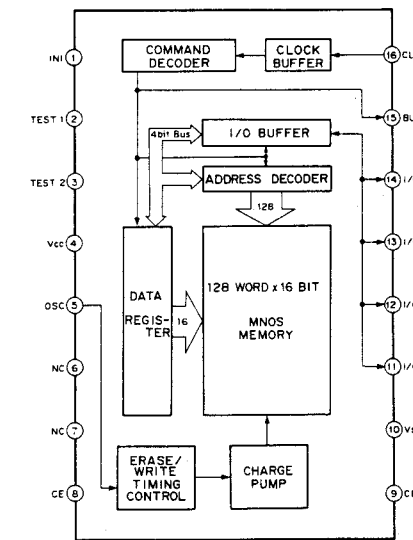


CXK1009P (SONY)
N-MOS 2048BIT (128x16) EPROM
- TOP VIEW -

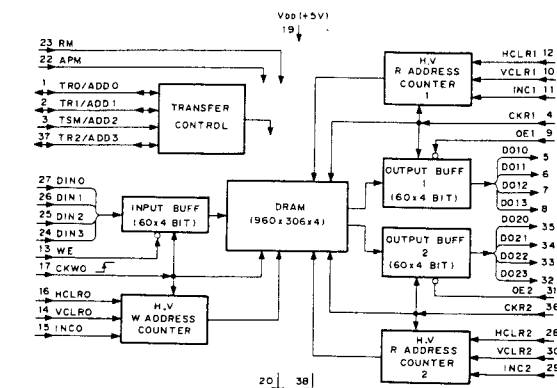
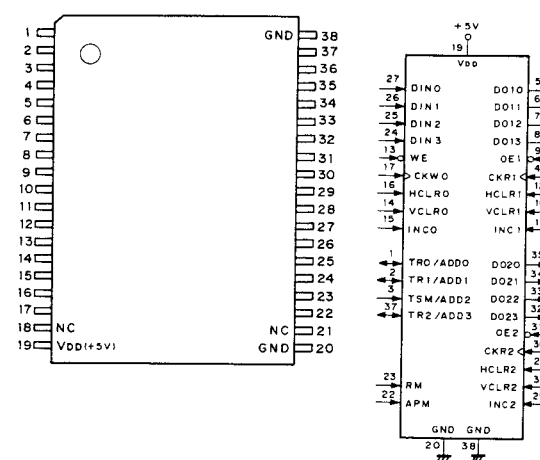
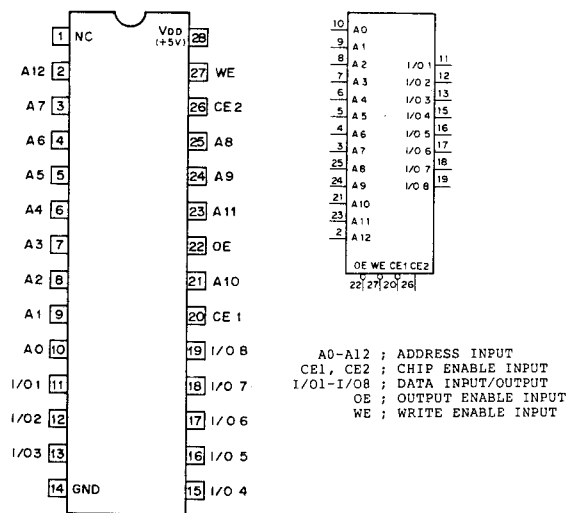


| CE | I/O1 | I/O2 | I/O3 | I/O4 | FUNCTION |
|----|------|------|------|------|--------------|
| 0 | 0 | 0 | 1 | 0 | READ |
| 0 | 1 | 0 | 1 | 0 | WRITE |
| 0 | X | X | 0 | 0 | NO OPERATION |
| 0 | X | X | 0 | 1 | NO OPERATION |
| 0 | X | X | 1 | 1 | NO OPERATION |
| 1 | X | X | X | X | NO OPERATION |

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE

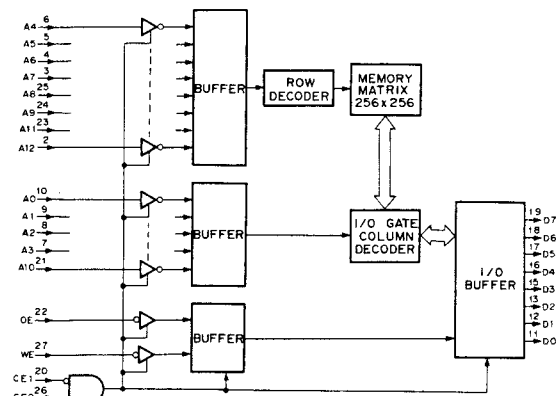


CXK1206M (SONY) FLAT PACKAGE

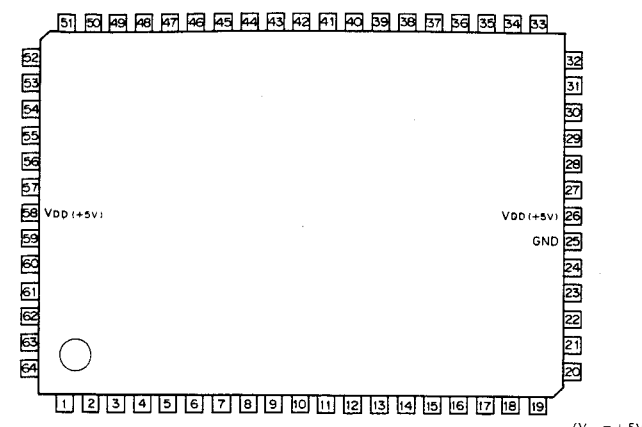
C-MOS VIDEO FIELD MEMORY (960-COLUMNx306-ROWx4-BIT)
- TOP VIEW -CXK5864BM-12L (SONY) (ACCESS TIME=120ns)
CXK5864BP-10L (SONY) (ACCESS TIME=100ns)C-MOS 64K(8192x8)-BIT STATIC RAM
- TOP VIEW -

| CE1 | CE2 | OE | WE | MODE | I/O TERMINAL |
|-----|-----|----|----|----------------|----------------|
| 1 | X | X | X | NOT SELECT | HIGH IMPEDANCE |
| X | 0 | X | X | NOT SELECT | HIGH IMPEDANCE |
| 0 | 1 | 1 | 1 | OUTPUT DISABLE | HIGH IMPEDANCE |
| 0 | 1 | 0 | 1 | READ | OUTPUT DATA |
| 0 | 1 | X | 0 | WRITE | INPUT DATA |

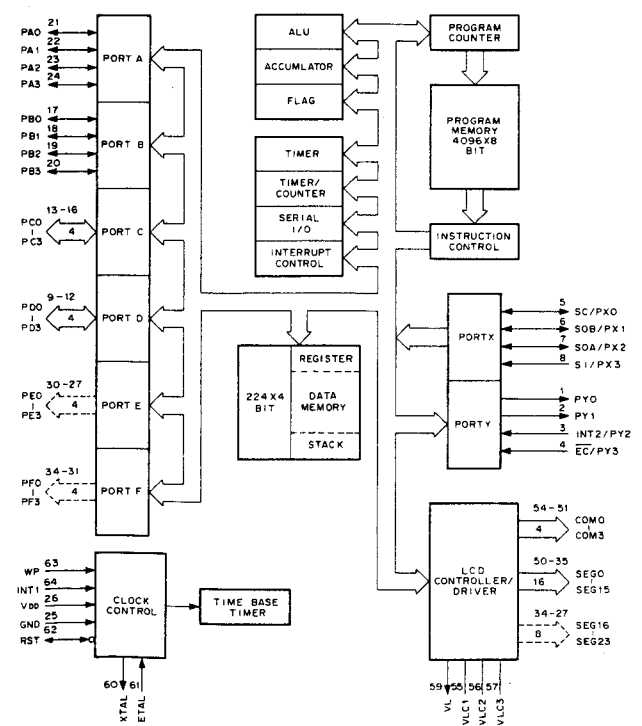
0:LOW LEVEL 1:HIGH LEVEL X:DON'T CARE



CXF5024H-1 (SONY) FLAT PACKAGE

C-MOS 4-BIT MICROCOMPUTER
- TOP VIEW -

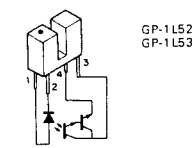
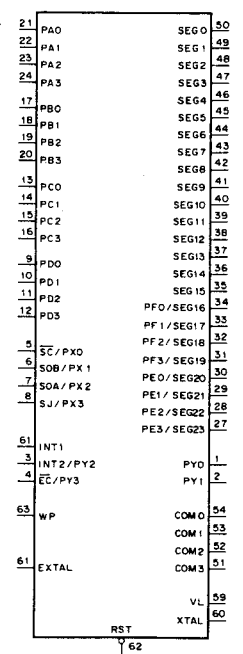
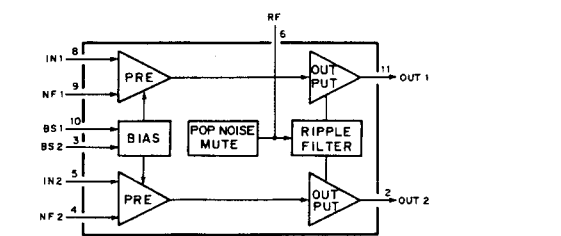
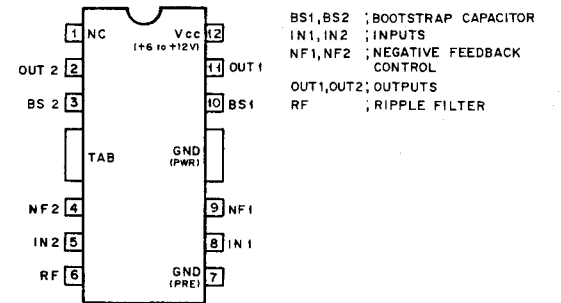
| PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL |
|---------|-----|----------|---------|-----|-----------|---------|-----|-----------|---------|-----|--------|
| 1 | O | RY0 | 17 | I/O | PB0 | 33 | O | PF1/SEG17 | 49 | O | SEG1 |
| 2 | O | RY1 | 18 | I/O | PB1 | 34 | O | PF0/SEG16 | 50 | O | SEG0 |
| 3 | I | INT2/PY2 | 19 | I/O | PB2 | 35 | O | SEG15 | 51 | O | COM3 |
| 4 | I | EC/PY3 | 20 | I/O | PB3 | 36 | O | SEG14 | 52 | O | COM2 |
| 5 | I/O | SC/PX0 | 21 | I/O | PA0 | 37 | O | SEG13 | 53 | O | COM1 |
| 6 | I/O | SOB/PX1 | 22 | I/O | PA1 | 38 | O | SEG12 | 54 | O | COM0 |
| 7 | I/O | SOA/PX2 | 23 | I/O | PA2 | 39 | O | SEG11 | 55 | - | Vcc1 |
| 8 | I | SI/PX3 | 24 | I/O | PA3 | 40 | O | SEG10 | 56 | - | Vcc2 |
| 9 | I/O | PD0 | 25 | - | Vss (GND) | 41 | O | SEG9 | 57 | - | Vcc3 |
| 10 | I/O | PD1 | 26 | - | VDD | 42 | O | SEG8 | 58 | - | VDD |
| 11 | I/O | PD2 | 27 | O | PE3/SEG23 | 43 | O | SEG7 | 59 | O | VL |
| 12 | I/O | PD3 | 28 | O | PE2/SEG22 | 44 | O | SEG6 | 60 | O | XTAL |
| 13 | I/O | PC0 | 29 | O | PE1/SEG21 | 45 | O | SEG5 | 61 | I | EXTAL |
| 14 | I/O | PC1 | 30 | O | PE0/SEG20 | 46 | O | SEG4 | 62 | I/O | RST |
| 15 | I/O | PC2 | 31 | O | PF3/SEG19 | 47 | O | SEG3 | 63 | I | WP |
| 16 | I/O | PC3 | 32 | O | PF2/SEG18 | 48 | O | SEG2 | 64 | I | INT1 |



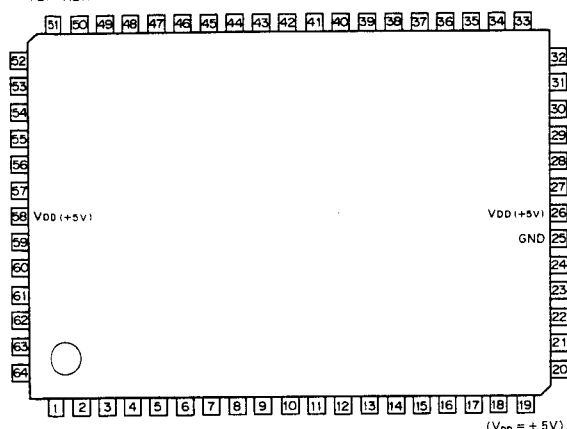
INPUT
EC : EVENT COUNT CLOCK INPUT
EXTAL : CLOCK INPUT
INT1 - INT2 : INTERRUPT INPUTS
RST : RESET
SC : SERIAL CLOCK
SI : SERIAL INPUT
WP : WAKE UP INPUT

OUTPUT
COM0 - COM3 : COMMON OUTPUTS
SEG0 - SEG23 : SEGMENT OUTPUTS
SOA, B : SERIAL OUTPUTS
VL : CUTOFF
XTAL : CLOCK OUTPUT

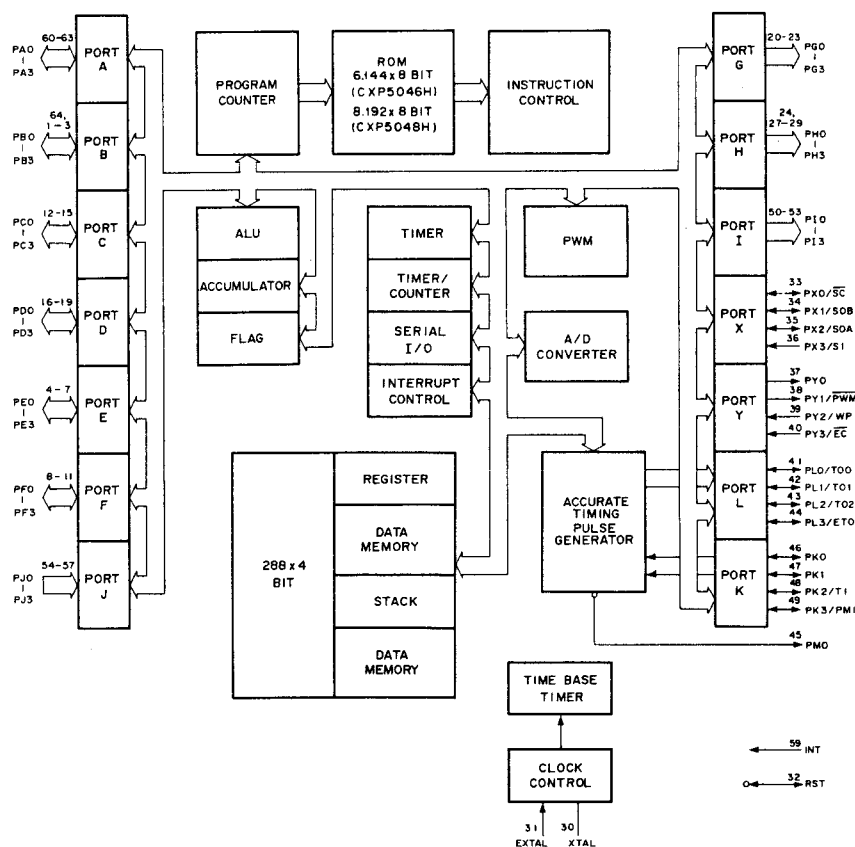
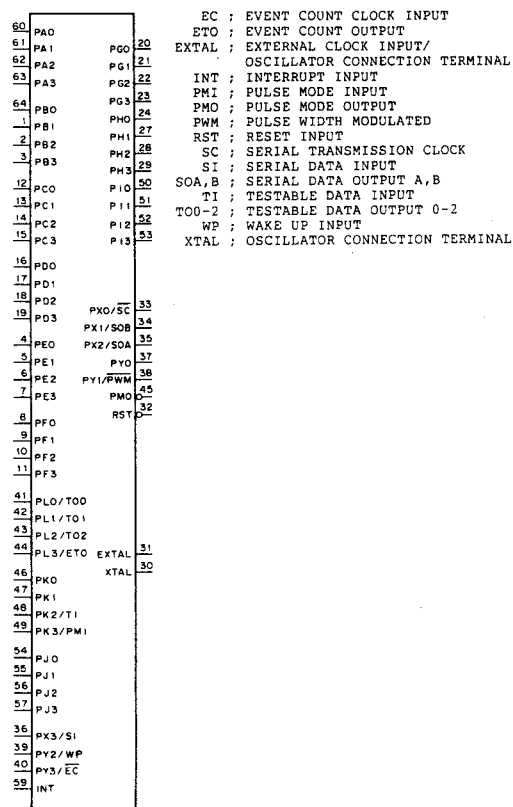
INPUT/OUTPUT
PA0 - PA3 : PORT A
PB0 - PB3 : PORT B
PC0 - PC3 : PORT C
PD0 - PD3 : PORT D
PE0 - PE3 : PORT E
PF0 - PF3 : PORT F
PX0 - PX3 : PORT X
PY0 - PY3 : PORT Y

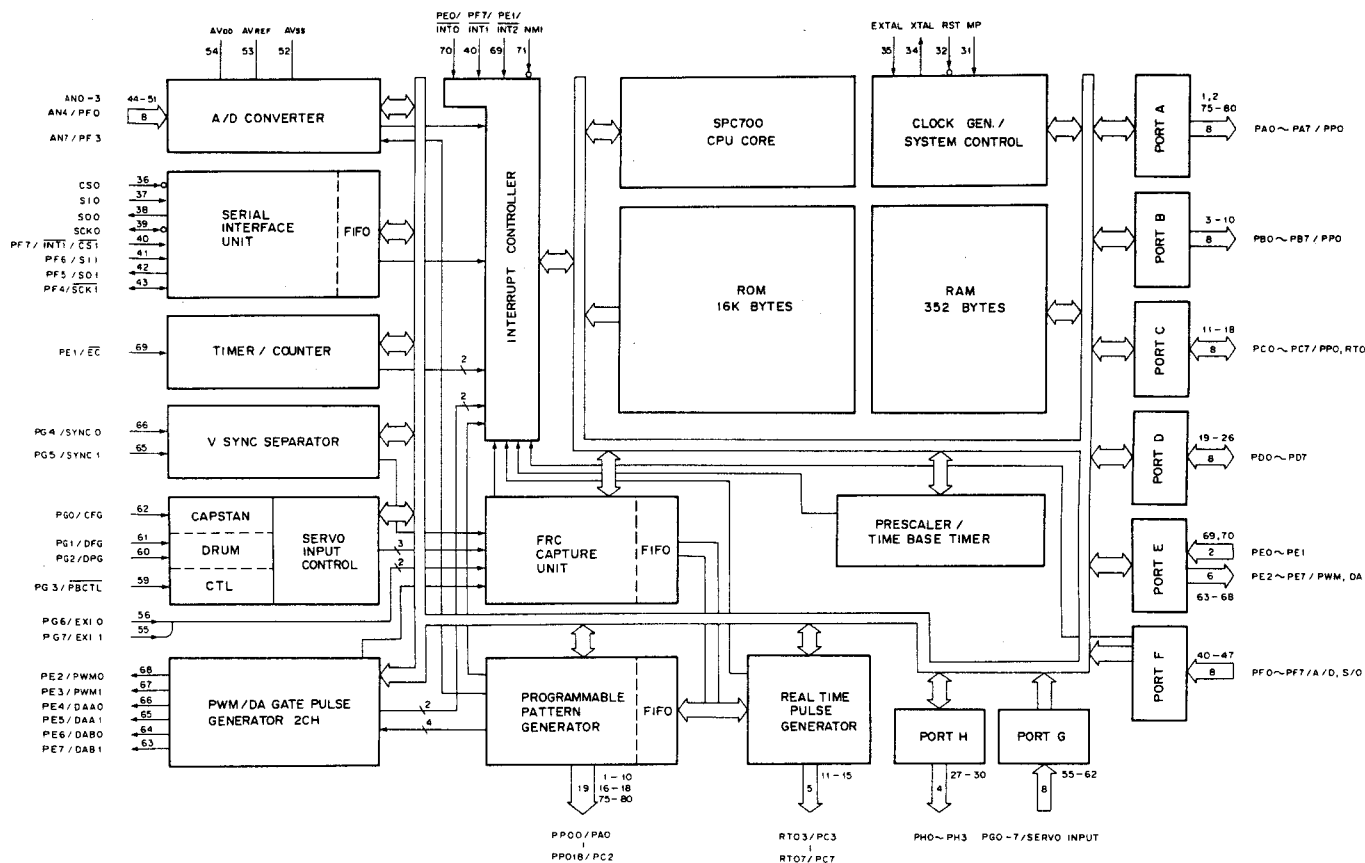
LA4550 (SANYO)
2CH AF POWER AMP
- TOP VIEW -

CXP5048H- ? ? ? Q (SONY) FLAT PACKAGE
C-MOS 4-BIT MICROCOMPUTER
- TOP VIEW -



| PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL | PIN NO. | I/O | SYMBOL |
|---------|-----|--------|---------|-----|--------|---------|-----|---------|---------|-----|---------|
| 1 | I/O | PB1 | 17 | I/O | PD1 | 33 | I/O | PX0/SC | 49 | I/O | PK3/PMI |
| 2 | I/O | PB2 | 18 | I/O | PD2 | 34 | I/O | PX1/SOB | 50 | O | PI0 |
| 3 | I/O | PB3 | 19 | I/O | PD3 | 35 | I/O | PX2/SOA | 51 | O | PI1 |
| 4 | I/O | PE0 | 20 | O | PG0 | 36 | I | PX3/SI | 52 | O | PI2 |
| 5 | I/O | PE1 | 21 | O | PG1 | 37 | O | PY0 | 53 | O | PI3 |
| 6 | I/O | PE2 | 22 | O | PG2 | 38 | O | PY1/PWM | 54 | I | PJ0 |
| 7 | I/O | PE3 | 23 | O | PG3 | 39 | I | PY2/WP | 55 | I | PJ1 |
| 8 | I/O | PF0 | 24 | O | PH0 | 40 | I | PY3/EC | 56 | I | PJ2 |
| 9 | I/O | PF1 | 25 | - | GND | 41 | I/O | PL0/TO0 | 57 | I | PJ3 |
| 10 | I/O | PF2 | 26 | - | VDD | 42 | I/O | PL1/TO1 | 58 | - | VDD |
| 11 | I/O | PF3 | 27 | O | PH1 | 43 | I/O | PL2/TO2 | 59 | I | INT |
| 12 | I/O | PC0 | 28 | O | PH2 | 44 | I/O | PL3/ETO | 60 | I/O | PA0 |
| 13 | I/O | PC1 | 29 | O | PH3 | 45 | O | PMO | 61 | I/O | PA1 |
| 14 | I/O | PC2 | 30 | O | XTAL | 46 | I/O | PK0 | 62 | I/O | PA2 |
| 15 | I/O | PC3 | 31 | I | EXTAL | 47 | I/O | PK1 | 63 | I/O | PA3 |
| 16 | I/O | PD0 | 32 | I/O | RST | 48 | I/O | PK2/TI | 64 | I/O | PB0 |

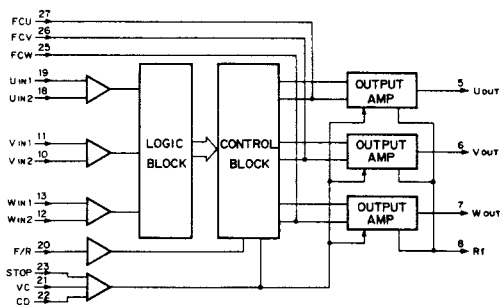
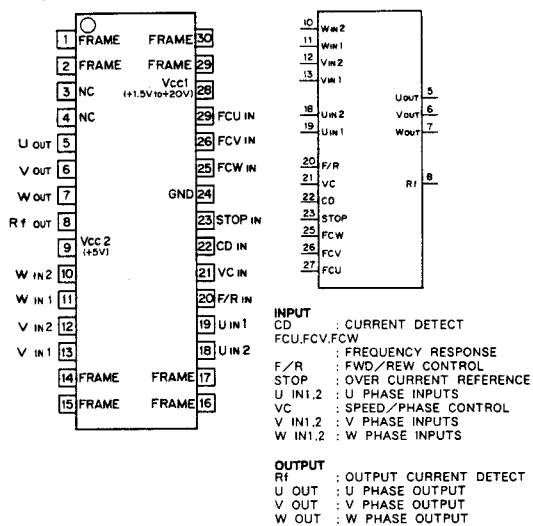




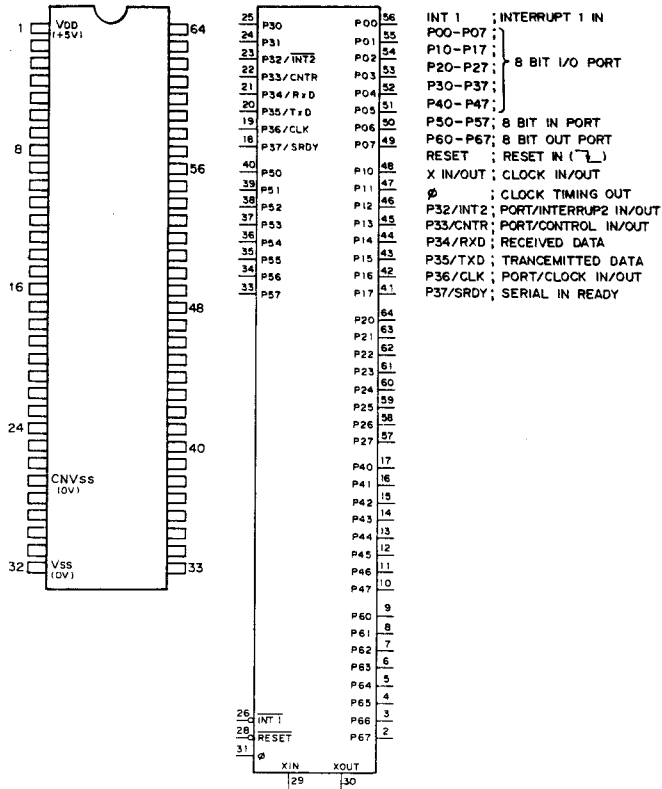
LB1616M (SANYO) FLAT PACKAGE

3DD MOTOR DRIVER

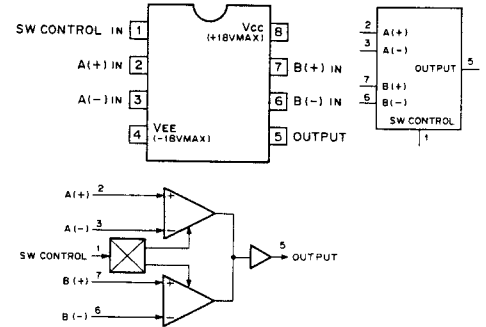
- TOP VIEW -



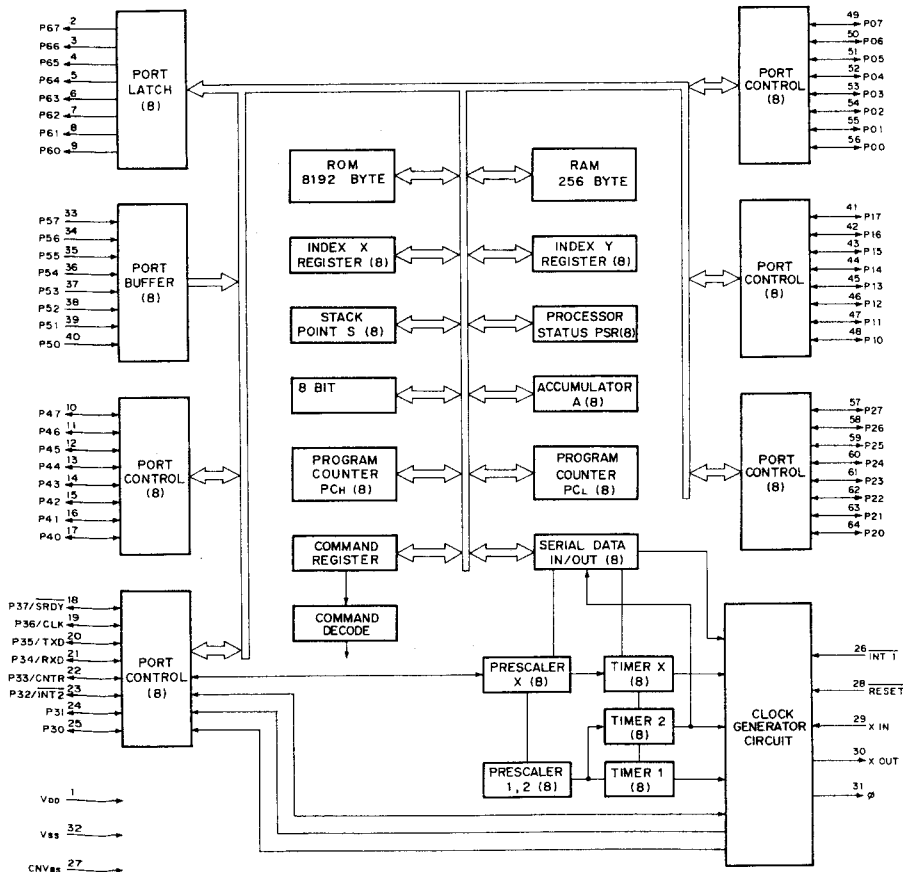
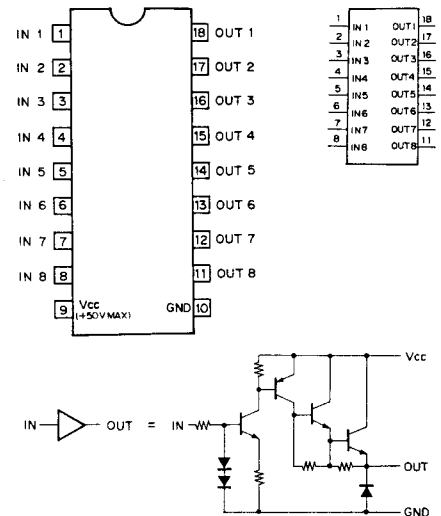
M50747H-XXXSP
C-MOS PROCESS 8-BIT ONE CHIP MICROCOMPUTER
— TOP VIEW —



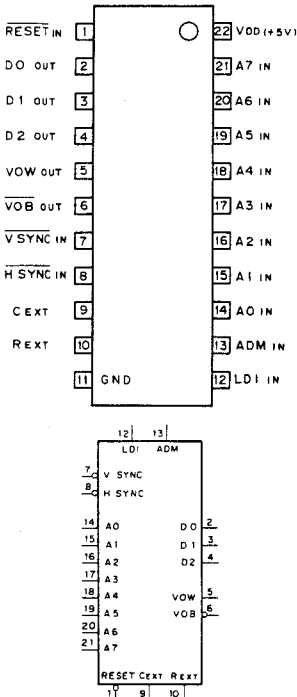
M5201FP (MITSUBISHI) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIER WITH SWITCHED OUTPUT
— TOP VIEW —



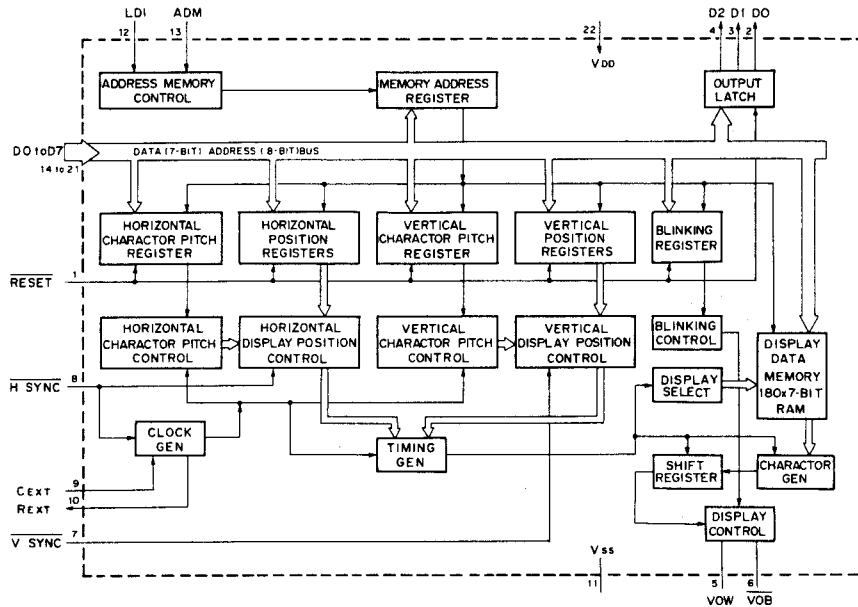
M54562P (MITSUBISHI)
SOURCE TYPE DARLINGTON TRANSISTOR ARRAY
— TOP VIEW —



MB88303 (FUJITSU)
N-MOS PROGRAMMABLE TV DISPLAY CONTROLLER
— TOP VIEW —

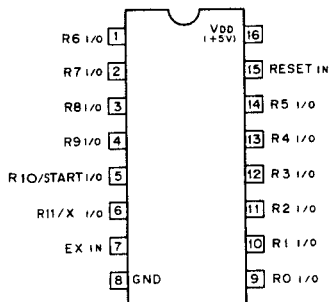


ADM : ADDRESS INCREMENT MODE
A0 to A7 : ADDRESS INPUT
DO to D2 : DATA OUTPUT
CEXT : EXT CAPACITOR FOR OSC
LD1 : LOAD DATA AND INSTRUCTION
VOB : VIDEO BLACK OUT
VOW : VIDEO WHITE OUT
REXT : EXT RESISTOR FOR OSC

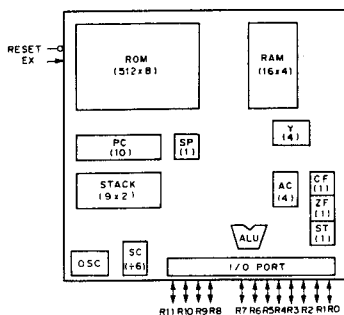


| b3-b0 | 0000 | 0001 | 0010 | 0011 | 0100 | 0101 | 0110 | 0111 | 1000 | 1001 | 1010 | 1011 | 1100 | 1101 | 1110 | 1111 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| b5-b4 | 00 | A | B | C | D | E | F | G | H | I | J | K | L | M | . | BLANK |
| | 01 | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | : | [|
| | 10 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | ? | ! | ' | . | BACK |
| | 11 | ↑ | ↓ | ← | → | + | - | * | / | = | & | | | | | |

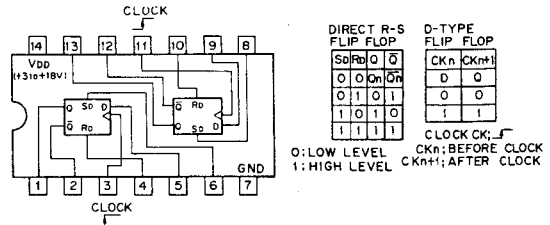
MB88201H (FUJITSU)
C-MOS 4 BIT MICROCOMPUTER
— TOP VIEW —



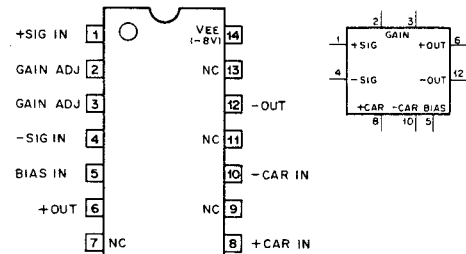
EX : EXTERNAL XTAL IN
RO-R11 : I/O PORT(R) IN/OUT
RESET : RESET IN
START : STANDBY RELEASE IN
R11/X : EXT CLOCK IN/INT CLOCK OUT



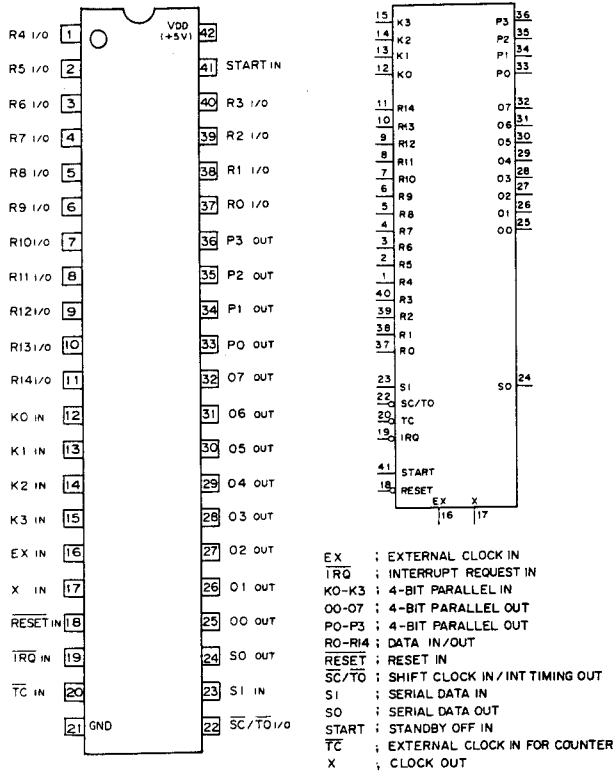
MC14013BCP (MOTOROLA)
C-MOS D-TYPE FLIP-FLOP WITH DIRECT SET/RESET
— TOP VIEW —



MC1496P (MOTOROLA)
BALANCED MODULATOR/DEMODULATOR
— TOP VIEW —



MB88505H (FUJITSU)

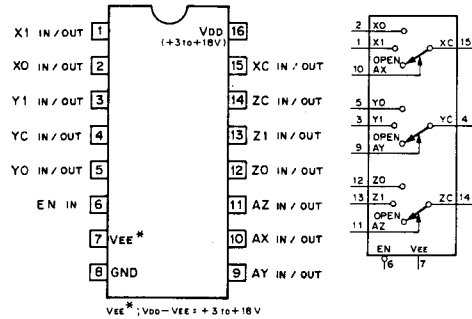
C-MOS 4-BIT ONE-CHIP MICROCOMPUTER
- TOP VIEW -

MC14053BCP (MOTOROLA)

MC14053BF (MOTOROLA) FLAT PACKAGE

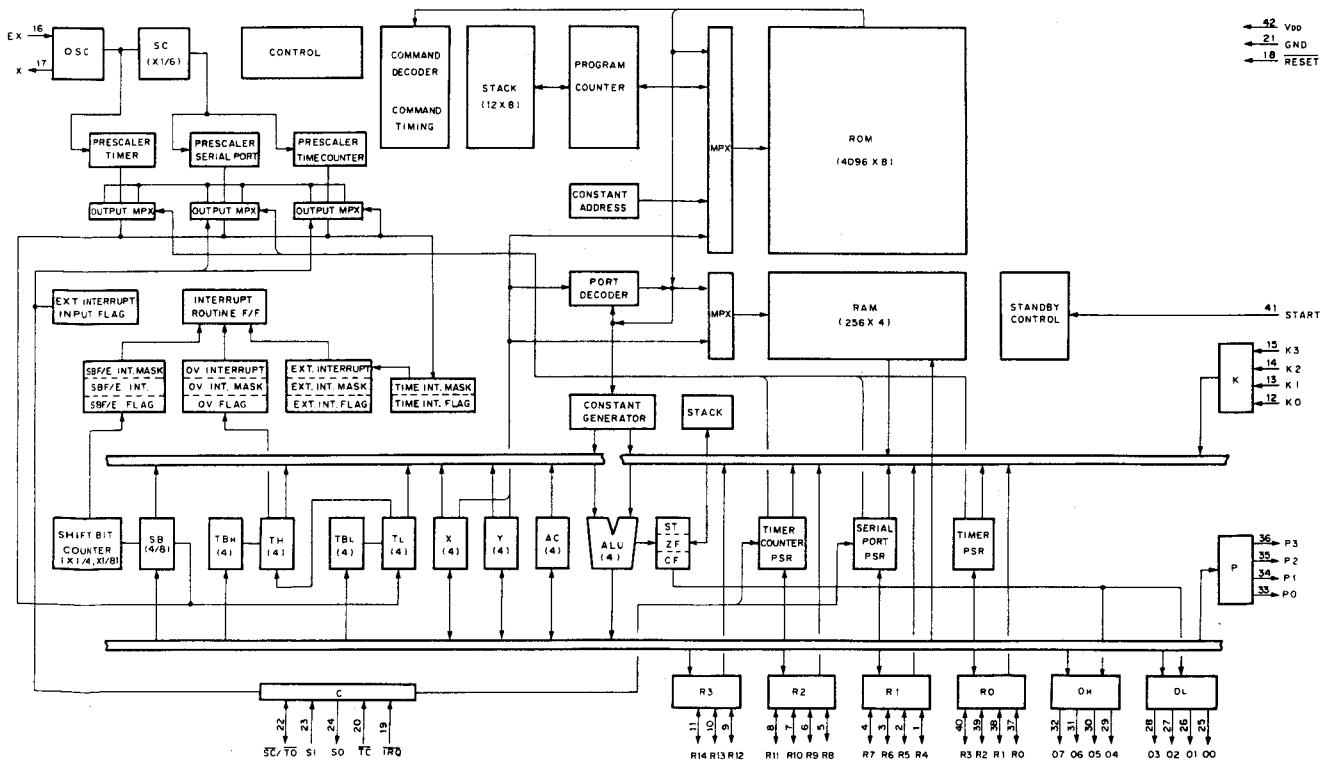
TC4053BF (TOSHIBA) FLAT PACKAGE

TC4053BFB (TOSHIBA) FLAT PACKAGE

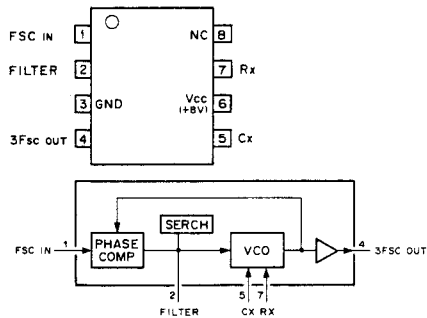
C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
- TOP VIEW -

| CONT. INPUTS | ON |
|--------------|---------|
| EN A (X,Y,Z) | CHANNEL |
| 0 | 0 |
| 0 | 1 |
| 1 | X |
| 1 | OPEN |

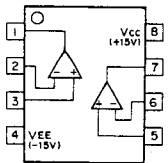
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE.



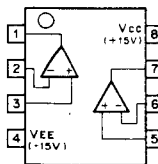
NJM2238M (JRC) FLAT PACKAGE
3-TIMES OSCILLATOR
- TOP VIEW -



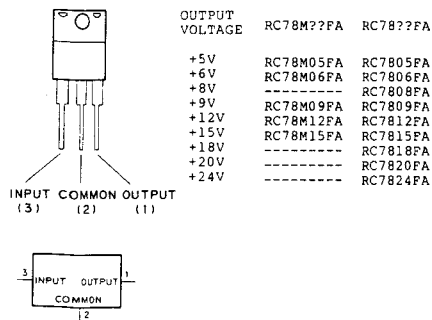
NJM4562D (JRC)
NJM4562M (JRC) FLAT PACKAGE
OPERATIONAL AMPLIFIER
- TOP VIEW -



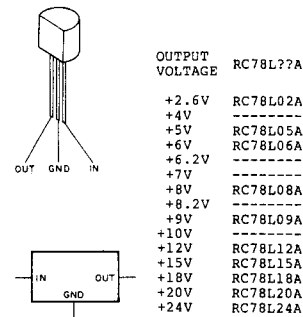
RC4560DD (RAYTHEON)
OPERATIONAL AMPLIFIER
- TOP VIEW -



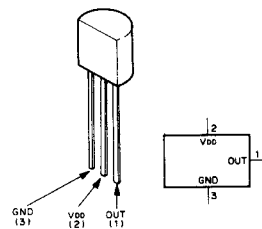
RC78M ??FA (RAYTHEON)
RC78 ? ?FA (RAYTHEON)
POSITIVE VOLTAGE REGULATOR
- FRONT VIEW -



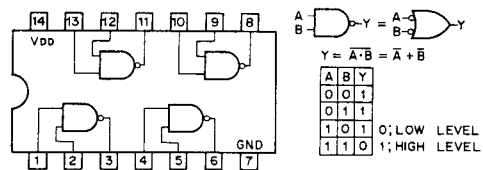
RC78L ??A (RAYTHEON)
POSITIVE VOLTAGE REGULATOR (100mA)



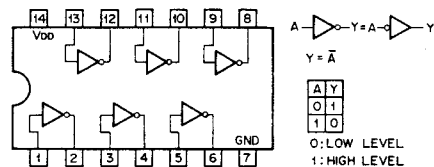
S-8054ALB (SEIKO)
C-MOS VOLTAGE DETECTOR



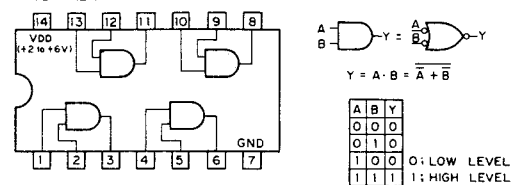
SN74HC00NS (TI) (V_{DD} = +2 to +6V) FLAT PACKAGE
C-MOS QUAD 2-INPUT NAND GATE
- TOP VIEW -



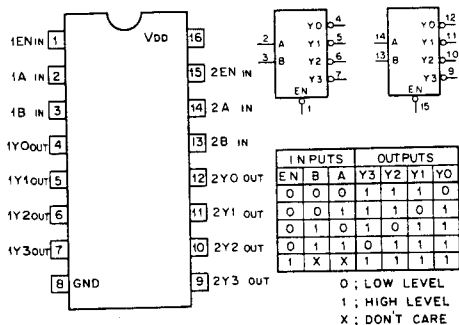
SN74HC04N (TI) (V_{DD} = +2 to +6V)
TC74HC04F (TOSHIBA) (V_{DD} = +2 to +6V) FLAT PACKAGE
C-MOS HEX INVERTER
- TOP VIEW -



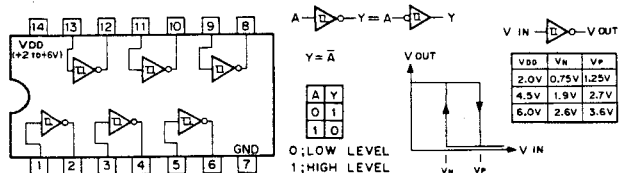
SN74HC08N (TI)
C-MOS QUAD 2-INPUT AND GATE
- TOP VIEW -



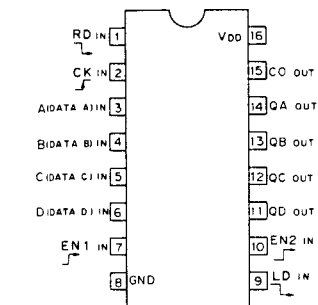
SN74HC139N (TI) ($V_{DD} = +2$ to $+6V$)
C-MOS 1-OF-4 DECODER/DEMULTIPLER
- TOP VIEW -



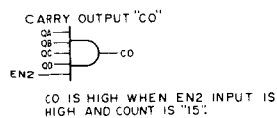
SN74HC14N (TI)
SN74HC14NS (TI) FLAT PACKAGE
C-MOS SCHMITT TRIGGER INVERTER
- TOP VIEW -



SN74HC163NS (TI) ($V_{DD} = +2$ to $+6V$) FLAT PACKAGE
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER
- TOP VIEW -

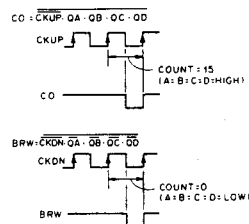
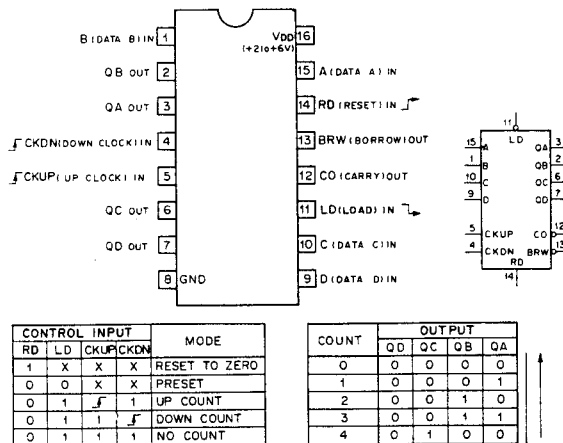


| MODE SELECTION | | | | | MODE |
|----------------|----|-----|-----|--|----------------------|
| RD | LD | EN1 | EN2 | | |
| 0 | X | X | X | | RESET (SYNCHRONOUS) |
| 1 | 0 | X | X | | PRESET (SYNCHRONOUS) |
| 1 | 1 | 0 | X | | NO COUNT |
| 1 | 1 | X | 0 | | NO COUNT |
| 1 | 1 | 1 | 1 | | COUNT |

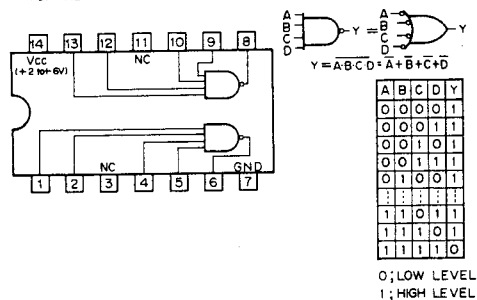


| COUNT SEQUENCE | | | | |
|----------------|----|----|----|----|
| COUNT | QD | QC | QB | QA |
| 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 2 | 0 | 0 | 1 | 0 |
| 3 | 0 | 0 | 1 | 1 |
| 4 | 0 | 1 | 0 | 0 |
| 5 | 0 | 1 | 0 | 1 |
| 6 | 0 | 1 | 1 | 0 |
| 7 | 0 | 1 | 1 | 1 |
| 8 | 1 | 0 | 0 | 0 |
| 9 | 1 | 0 | 0 | 1 |
| 10 | 1 | 0 | 1 | 0 |
| 11 | 1 | 0 | 1 | 1 |
| 12 | 1 | 1 | 0 | 0 |
| 13 | 1 | 1 | 0 | 1 |
| 14 | 1 | 1 | 1 | 0 |
| 15 | 1 | 1 | 1 | 1 |

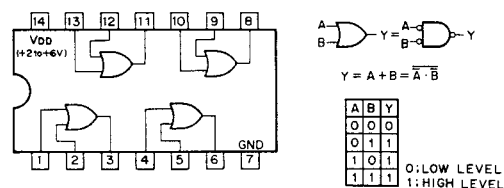
SN74HC193N (TI)
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT UP/DOWN COUNTER
- TOP VIEW -



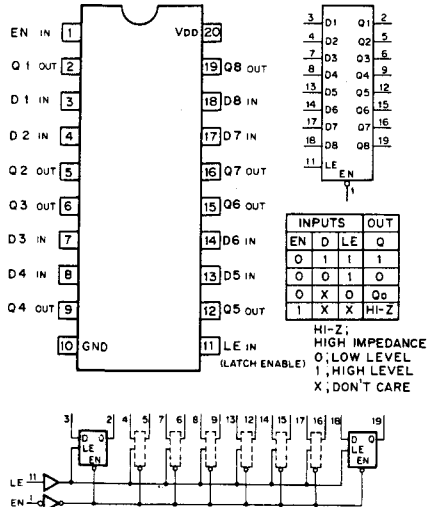
SN74HC20N (TI)
C-MOS 4-INPUT POSITIVE-NAND GATE
- TOP VIEW -



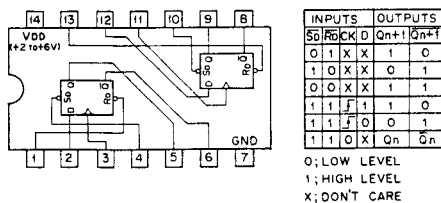
SN74HC32N (TI)
C-MOS 2-INPUT OR GATE
- TOP VIEW -



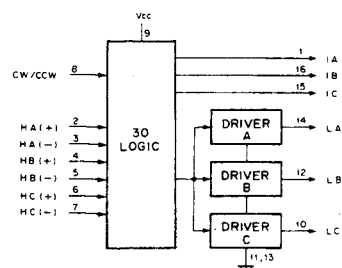
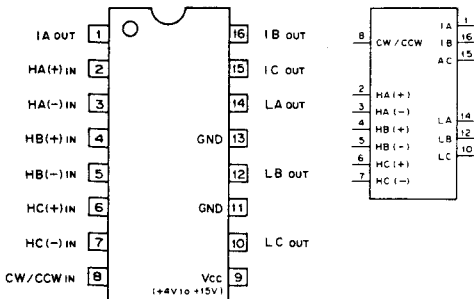
SN74HC373N (TI) ($V_{DD} = +2$ to $+6V$)
C-MOS 3-STATE OUTPUTS OCTAL LATCHES
— TOP VIEW —



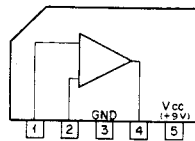
SN74HC74N (TI)
SN74HC74NS (TI) FLAT PACKAGE
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
— TOP VIEW —



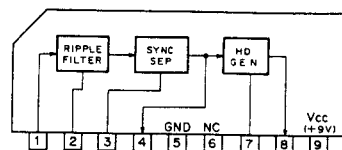
TA7745F (TOSHIBA) FLAT PACKAGE
DC MOTOR DRIVER
— TOP VIEW —



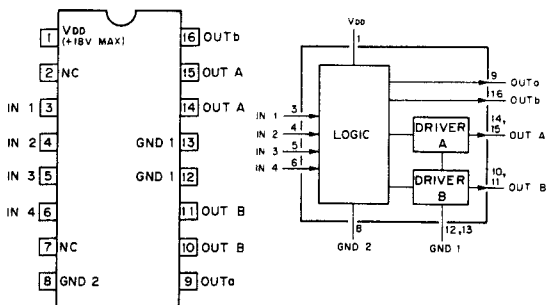
TA7060AP (TOSHIBA)
LINEAR AMP
— SIDE VIEW —



TA7357AP (TOSHIBA)
SYNC SEPARATOR/HD PULSE GENERATOR
— SIDE VIEW —



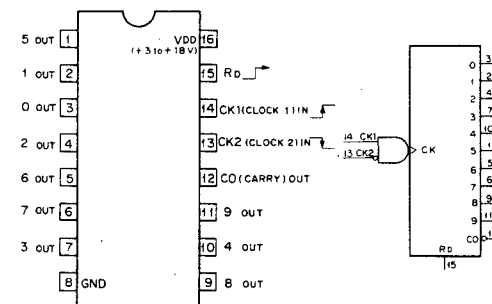
TA7733F (TOSHIBA) FLAT PACKAGE
FUNCTIONABLE BRIDGE DRIVER
— TOP VIEW —



| CONTROL | INPUTS | | | | OUTPUTS | | | | MODE |
|-----------------|--------|-----|-----|-----|---------|------|------|------|---------|
| | IN1 | IN2 | IN3 | IN4 | OUTA | OUTB | OUTC | OUTD | |
| 2-INPUT CONTROL | 1 | 0 | 1 | 1 | ON | — | ON | — | FWD |
| | 0 | 1 | 1 | 1 | — | ON | — | ON | REV |
| | 1 | 1 | 1 | 1 | ON | ON | — | — | BRAKE |
| | 0 | 0 | 1 | 1 | — | — | — | — | STOP |
| 1-INPUT CONTROL | 1 | 0 | 0 | 1 | ON | — | ON | — | A ON |
| | 0 | 0 | 0 | 1 | — | ON | — | ON | B ON |
| | X | 1 | 0 | 1 | ON | ON | — | — | AB ON |
| | | | | 0 | — | — | — | — | INHIBIT |

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE

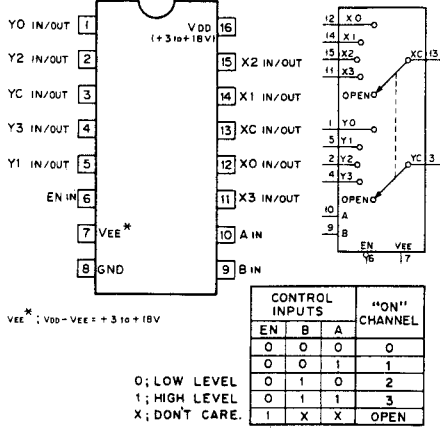
TC4017BP (TOSHIBA)
C-MOS DECADE COUNTER/DIVIDER
— TOP VIEW —



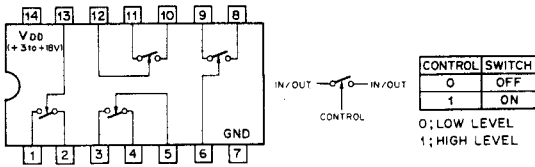
| COUNT | INPUTS | | | | OUTPUTS | | | |
|----------|--------|-----|-----|----|----------------|----------------|----------------|----------------|
| | RD | CK1 | CK2 | CO | Q ₀ | Q ₁ | Q ₂ | Q ₃ |
| 0 | 1 | X | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | — | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | — | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | — | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | — | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | — | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | — | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | — | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | — | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | — | 0 | 0 | 0 | 0 | 0 | 0 |
| NO COUNT | 0 | 1 | | | | | | |
| | 0 | 0 | | | | | | |

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE

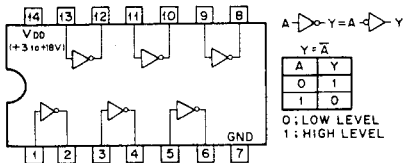
TC4052BFB (TOSHIBA) FLAT PACKAGE
C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXER/DEMUTIPLEXER
- TOP VIEW -



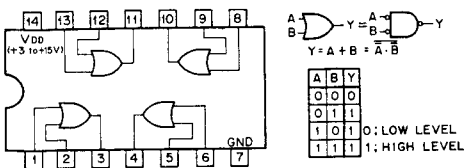
TC4066BF (TOSHIBA) FLAT PACKAGE
C-MOS BILATERAL ANALOG SWITCH
- TOP VIEW -



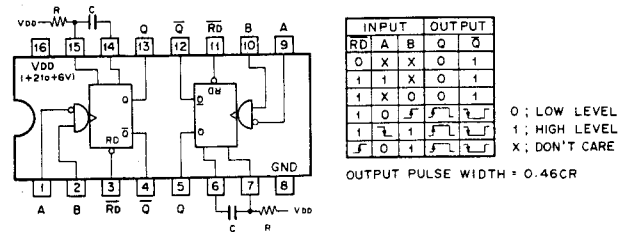
TC4069UBP (TOSHIBA)
C-MOS INVERTER
- TOP VIEW -



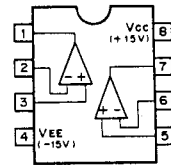
TC4071BP (TOSHIBA)
C-MOS 2-INPUT OR GATE
- TOP VIEW -



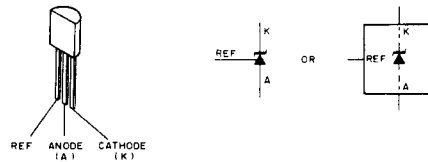
TC74HC123F (TOSHIBA) FLAT PACKAGE
C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
- TOP VIEW -



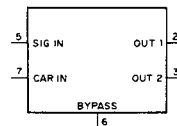
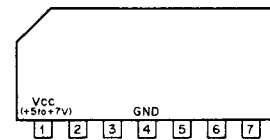
TL082CP (TI)
OPERATIONAL AMPLIFIER
(J FET-INPUT)
- TOP VIEW -



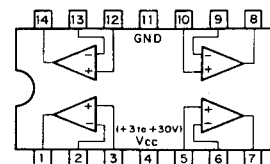
TL431CLP (TI)
ADJUSTABLE PRECISION SHUNT REGULATOR



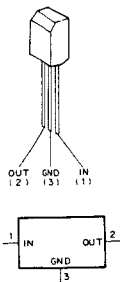
uPC1037HA (NEC)
DOUBLE-BALANCED MODULATOR
- SIDE VIEW -



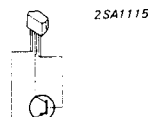
uPC324G2 (NEC) FLAT PACKAGE
QUAD. OP. AMPLIFIER
- TOP VIEW -



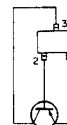
uPC78L??A (NEC)
POSITIVE VOLTAGE REGULATOR (100mA)



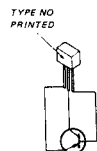
| OUTPUT VOLTAGE | uPC78L?? | uPC78L??A |
|----------------|----------|-----------|
| 5V | uPC78L05 | uPC78L05A |
| 6V | | |
| 8V | uPC78L08 | |
| 9V | | |
| 12V | uPC78L12 | |
| 15V | uPC78L15 | |



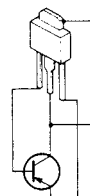
2SA1115



2SA1122
2SA1162
2SA1226
2SA812

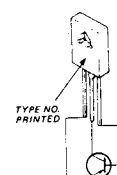
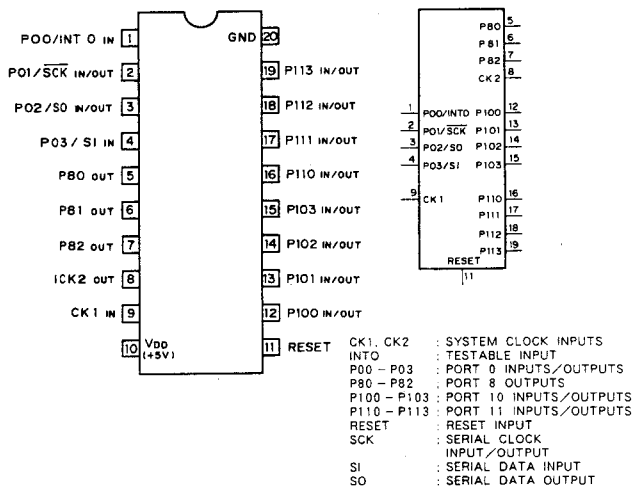


2SA1175

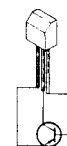


2SA1385

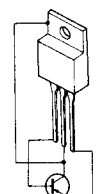
uPD7564 (NEC)
CMOS SINGLE CHIP 4-BIT MICROCOMPUTER
- TOP VIEW -



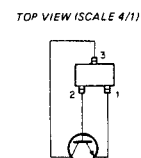
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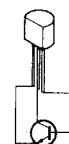
2SB733



2SB856



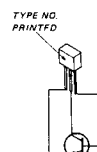
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2SC2223
2SC2714
2SC3326
2SC3735



2SC1815
2SC2878



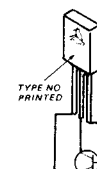
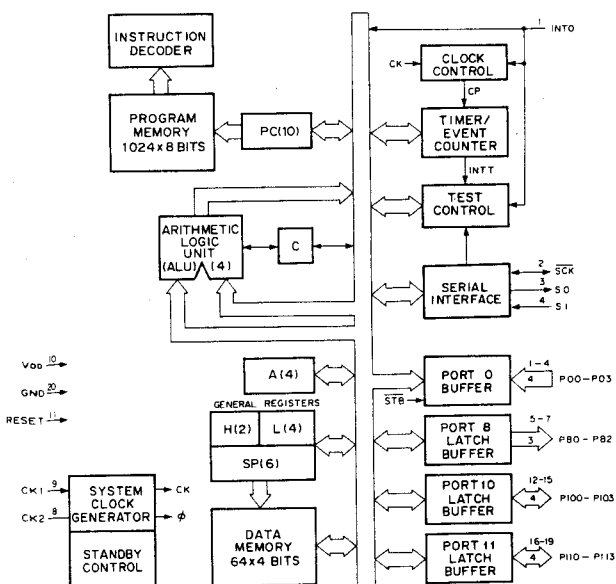
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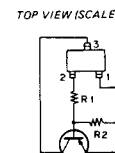
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2SC3327
2SC4035P

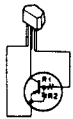


2SD669A

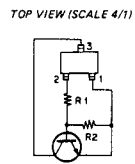


DTA114EK (R1 = 10K, R2 = 10K)
DTA124EK (R1 = 22K, R2 = 22K)
DTA144EK (R1 = 47K, R2 = 47K)

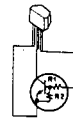
TRANSISTOR, DIODE



DTA124XS (R1=22K, R2=47K)
DTA143XS (R1=4.7K, R2=10K)
DTA144ES (R1=47K, R2=47K)



DTC114EK (R1 = 10K, R2 = 10K)
DTC124EK (R1 = 22K, R2 = 22K)
DTC144EK (R1 = 47K, R2 = 47K)

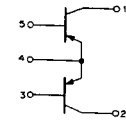


DTC144ES (R1=47K, R2=47K)

(SCALE 6/1)
TOP VIEW



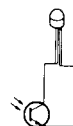
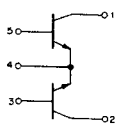
FMS2



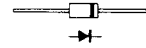
(SCALE 6/1)
TOP VIEW



FMW1

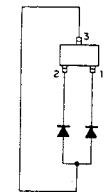


NJL7141E



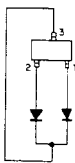
10E-2
1SS119
1SS133

TOP VIEW (SCALE 4/1) 1S2835



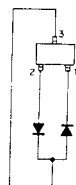
TOP VIEW (SCALE 4/1)

1S2837



TOP VIEW (SCALE 4/1)

1SS123



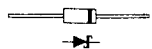
TOP VIEW (SCALE 4/1)

1SS193



TOP VIEW (SCALE 4/1)

1SS196

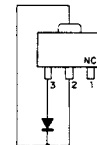


1SS97
1SS99



1T33C

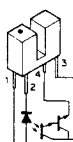
TOP VIEW (SCALE 4/1) E10DS2



FC54M

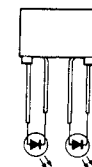


GL-5HD5 : RED



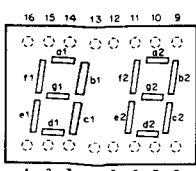
GP-1L52
GP-1L53

-SIDE VIEW-
(SCALE 2/1)

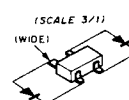
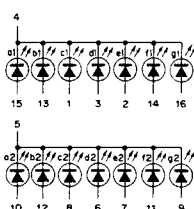


LT-9200D : RED
LT-9200H : YELLOW

DUAL 7-SEGMENT LED
- TOP VIEW -



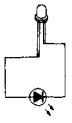
LB402VK (ROHM)



MA159



RD??ESB?



TLG124A : GREEN



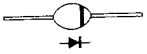
TLG256 : GREEN
TLY256 : YELLOW



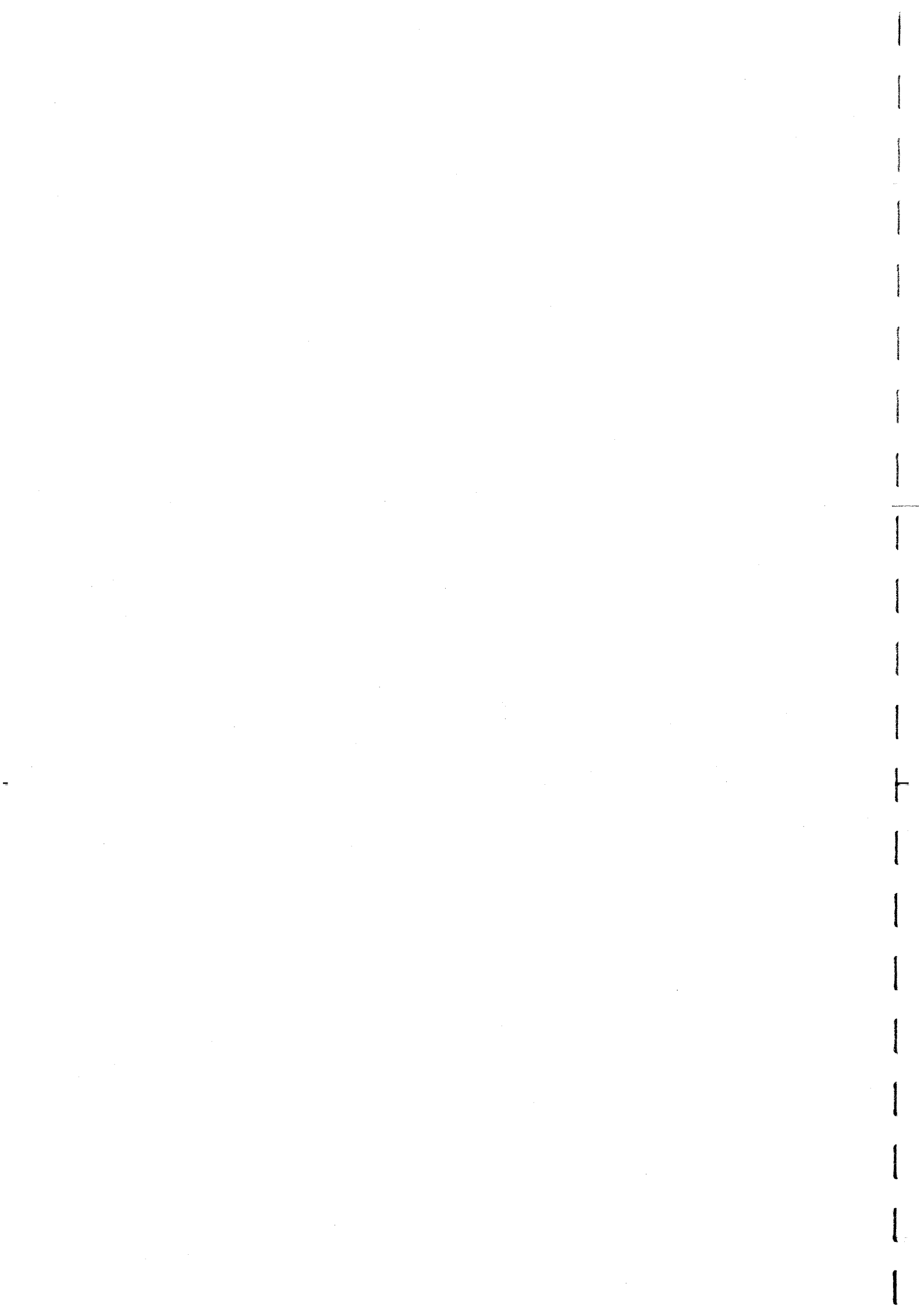
TLUG144 : GREEN
TLUY144 : YELLOW



TLUG154 : GREEN



U05E



SECTION 13
PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

CIRCUIT FUNCTION OF THE PRINTED CIRCUIT BOARDS

Mechanical deck

| SYSTEM | BOARD | CIRCUIT FUNCTION |
|-----------------|--------|-----------------------|
| VIDEO | FR-43 | Head Amp/Flying Erase |
| | HK-5 | Y/C Video process |
| | RP-73 | REC/PB Head Amp (LP) |
| | RP-103 | REC/PB Head Amp (SP) |
| AUDIO | MB-19 | PCM Audio |
| | PA-27 | PCM Audio Analog |
| | PD-19 | PCM Audio Digital |
| SYSCON SERVO | TS-74 | Tape Top/End Sensor |
| | IG-4 | Terminal |
| | LD-1 | Tape Sensor |
| | MS-4 | Mode Switch |
| | LS-9 | Loading Switch |
| | RS-31 | Mechanism Control |
| | MD-23P | Capstan/Drum Drive |
| Others | SE-10P | Servo, Syscon |
| | FP-84 | Connection |
| | FP-206 | Connection |
| | FP-122 | Connection |

| SYSTEM | BOARD | CIRCUIT FUNCTION |
|--------------------|------------------|---|
| VIDEO | YC-46 VO-30 | YC Separator Video Interface |
| AUDIO | AU-127 AA-16 | Audio Input/Output Amp XLR Input/Output Amp |
| SYSCON | SY-145A | System Control |
| | KY-162 | Function Key Board |
| | DP-101 | Display |
| | DD-12 PTC-32 | Display Drive Search Dial |
| DIGITAL PROCESS | DI-12 DI-13 | Digital CNR Read Timing Control Pulse Generator |
| POWER | DC-45A UR-14E | DC Supply Switching Regulator |
| Others | LP-52 | Mode Display |
| | CP-141 | Connector Panel |
| | CP-162 | S Video Connector Panel |
| | SW-346 | Audio Level Control |
| | SW-347A | Audio select SW |
| | SW-348 | Remote Panel SW |
| | MC-28 | Mic. Jack |
| | HP-42 | Head phones Level |
| | MT-57 | Audio Meter Level |
| | RM-83 | 9-pin Connector |

FR-43, RP-103, RP-73 (LP)

FR-43, RP-103, RP-73 (LP)

FR-43; HEAD AMPLIFIER/FLYING ERASE
RP-103; REC/PB HEAD AMPLIFIER (SP)
RP-73 (LP); REC/PB HEAD AMPLIFIER (LP)

FR-43(1-635-127-11, 12)C

CN001 C-1
CN002 E-1
CN003 E-2
CN004 A-2

D001 A-1

HIC001 B-2
HIC002 C-2

IC051 E-1

Q008 B-1
Q009 A-1
Q031 E-2
Q032 D-2
Q042 D-1

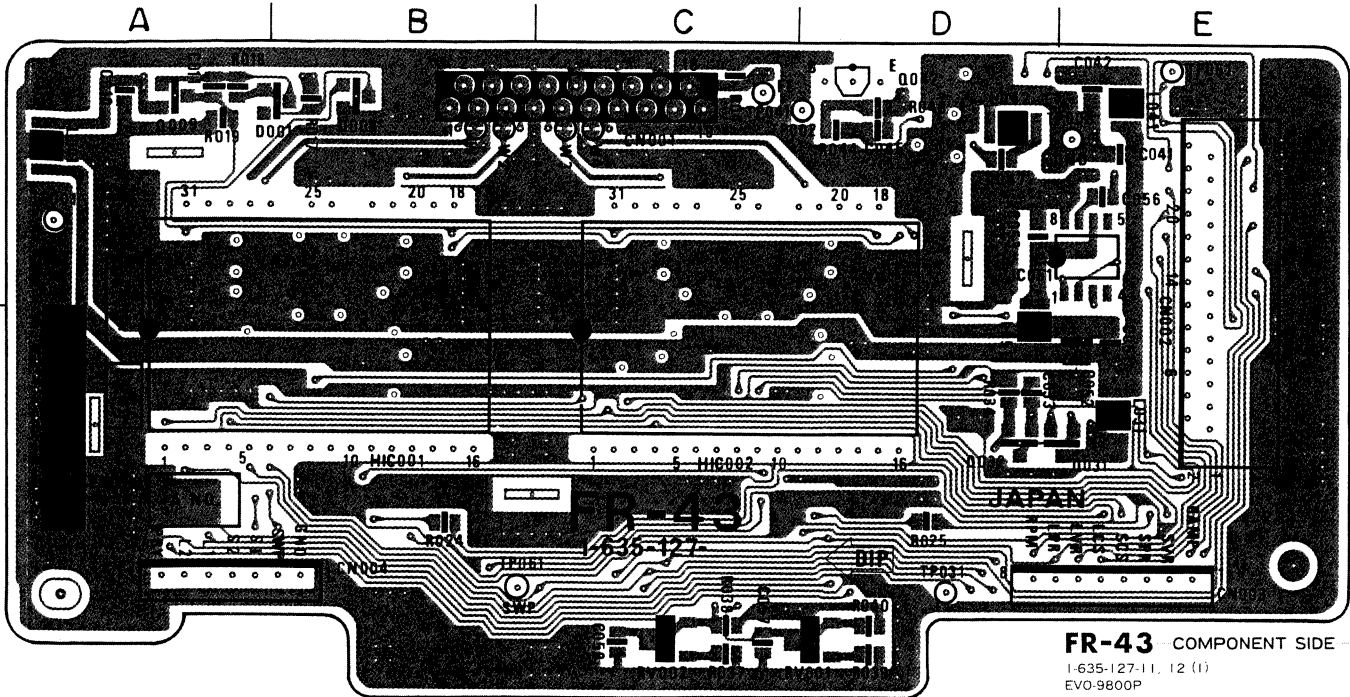
RV001 C-2
RV002 C-2

TP001 A-1
TP002 C-1
TP003 E-1
TP031 D-2
TP041 C-1
TP051 E-1
TP061 B-2

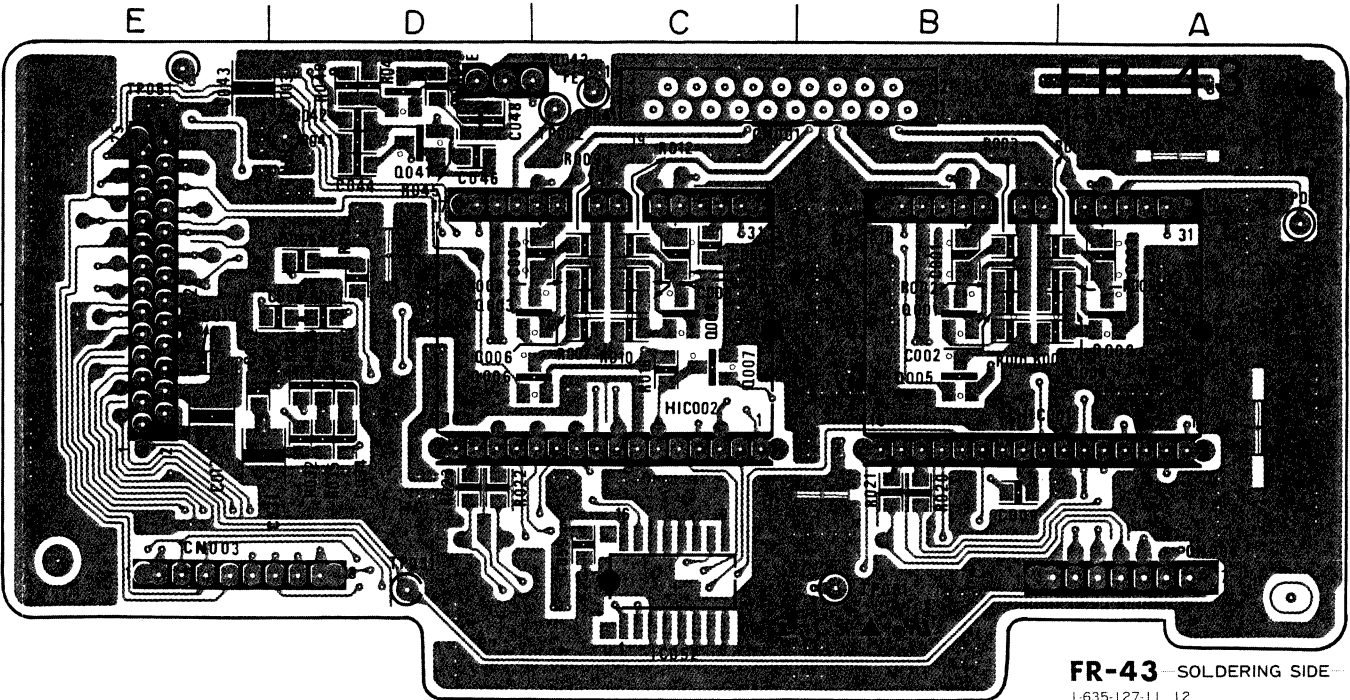
FR-43(1-635-127-11, 12)S

Q001 B-2
Q002 A-2
Q003 D-2
Q004 C-2
Q005 B-2
Q006 D-2
Q007 C-2
Q041 D-1
Q043 D-1

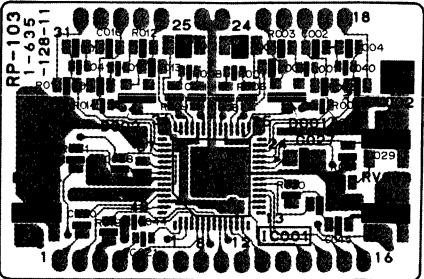
IC052 C-2



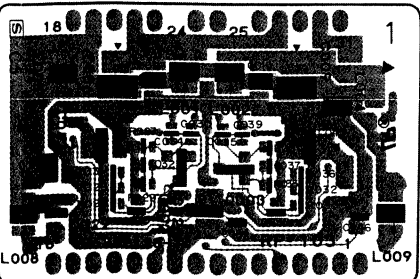
FR-43 COMPONENT SIDE
1-635-127-11, 12 (I)
EVO-9800P



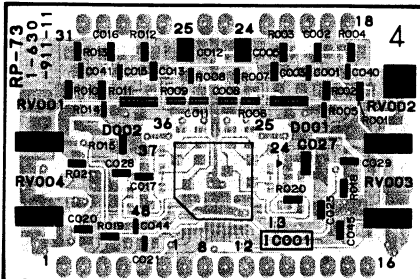
FR-43 SOLDERING SIDE
1-635-127-11, 12
EVO-9800P



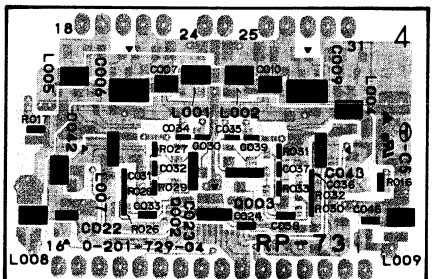
RP-103 COMPONENT SIDE
1-635-128-11 (I)
EVO-9800P



RP-103 SOLDERING SIDE
1-635-128-11 (I)
EVO-9800P



RP-73(LP) COMPONENT SIDE
1-630-911-11 (I)
EVO-9800
EVO-9800P

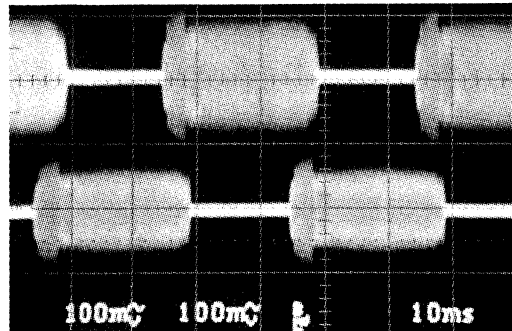


RP-73(LP) SOLDERING SIDE
1-630-911-11 (I)
EVO-9800
EVO-9800P

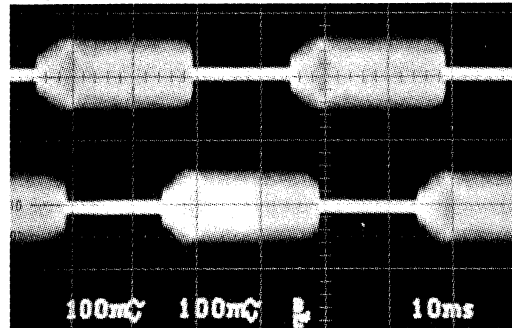
FR-43; HEAD AMPLIFIER/FLYING ERASE
RP-103; REC/PB HEAD MAPLIFIER (SP)
RP-73 (LP); REC/PB HEAD AMPLIFIER (LP)

FR-43

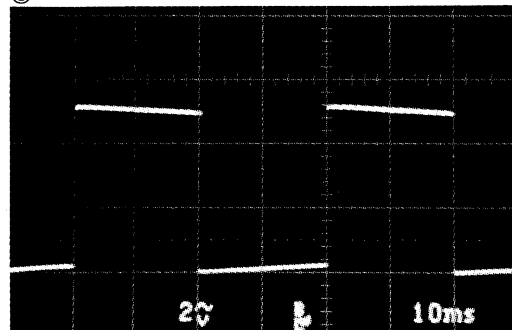
① CH-1: CN004-3
CH-2: CN004-4 PB mode



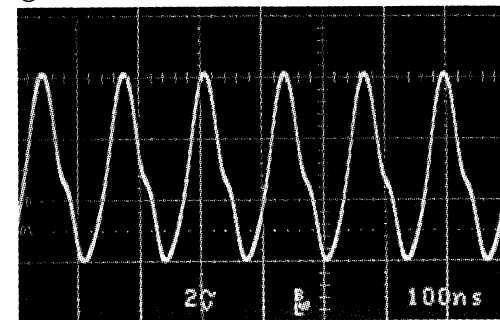
② CH-1: CN004-5
CH-2: CN004-6 PB mode



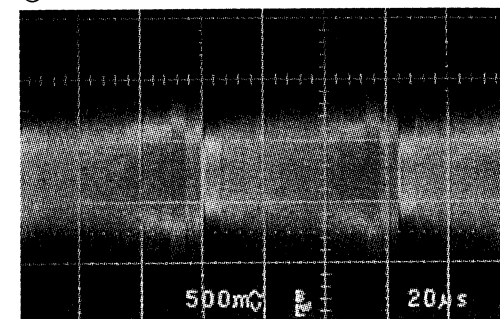
③ TP061 PB mode



④ TP041 REC mode

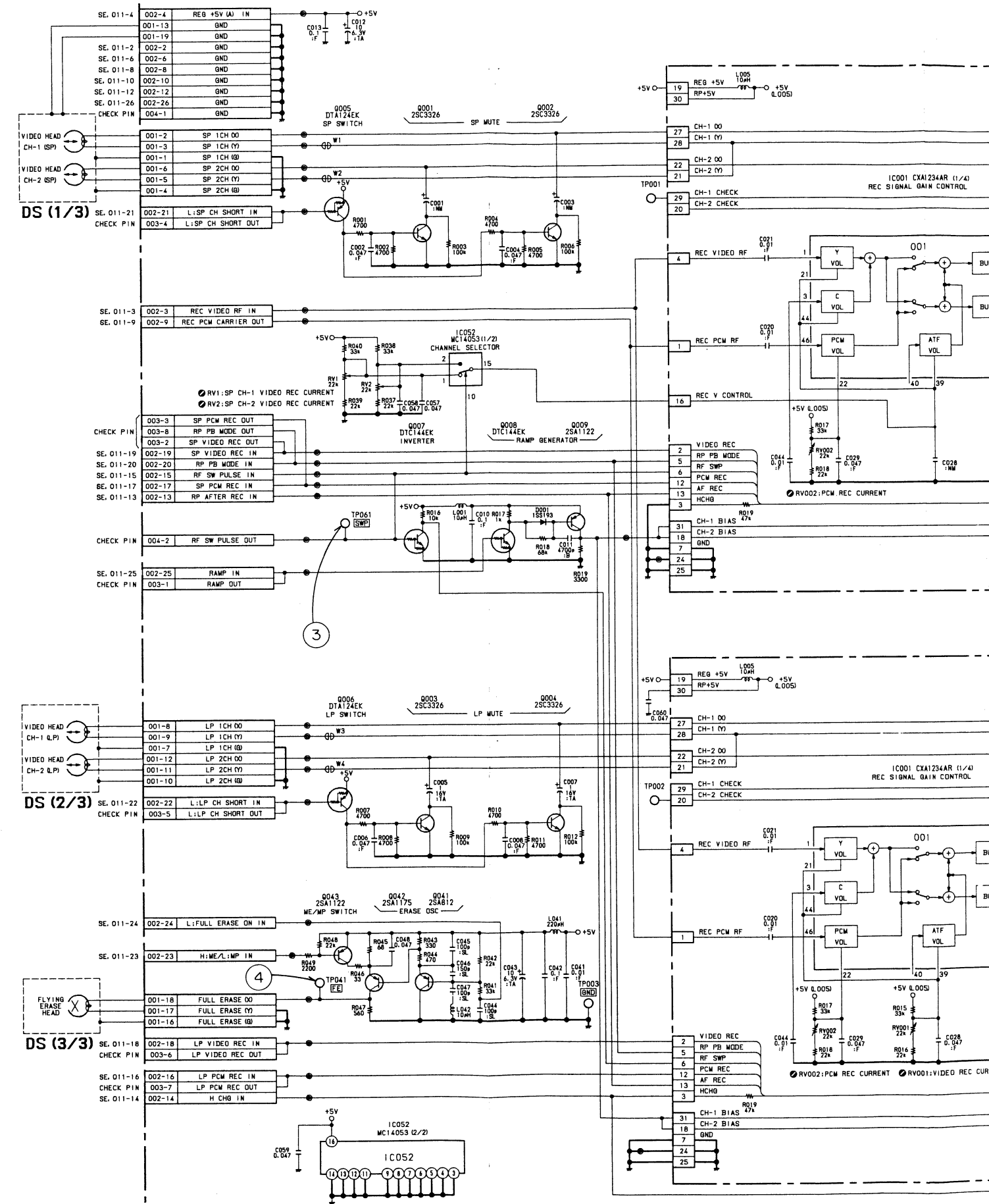


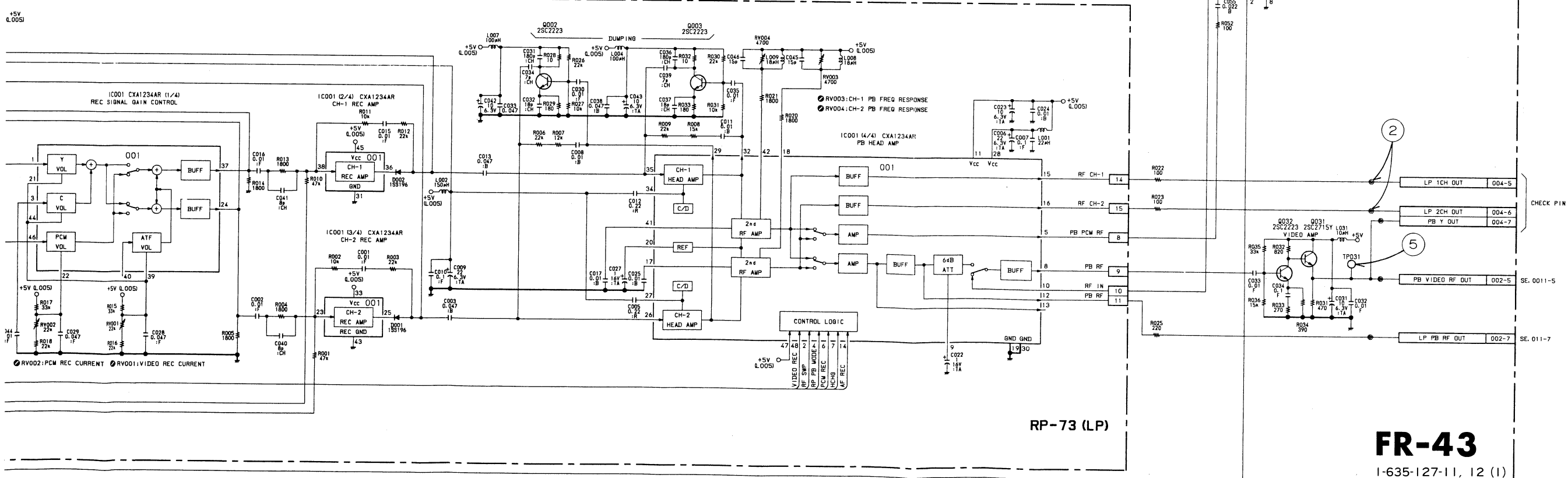
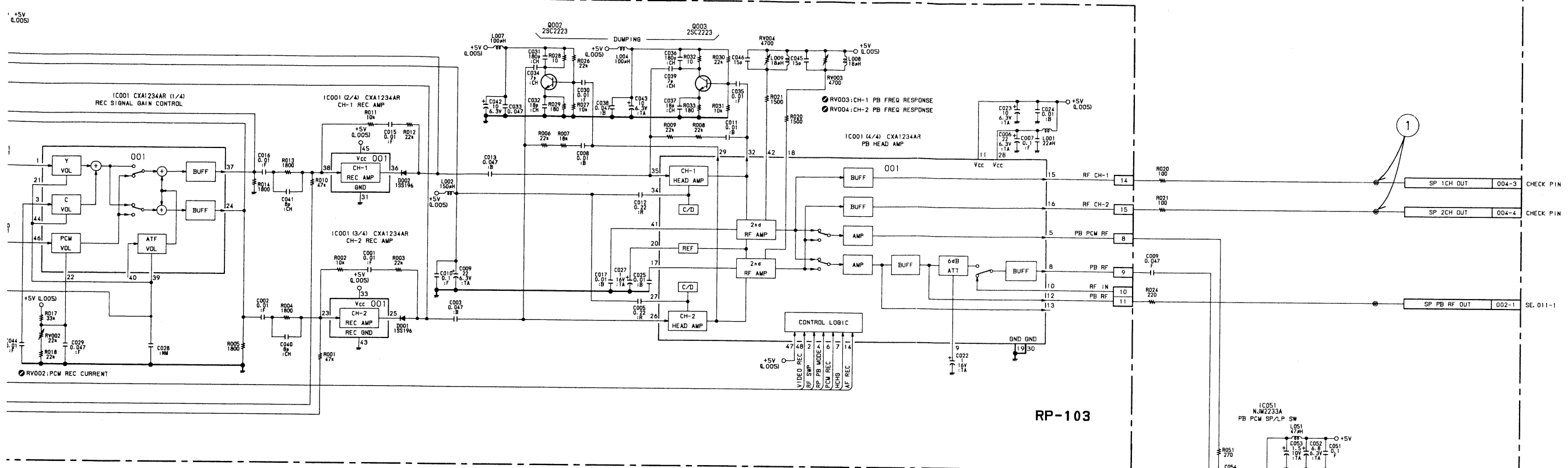
⑤ TP031 PB mode



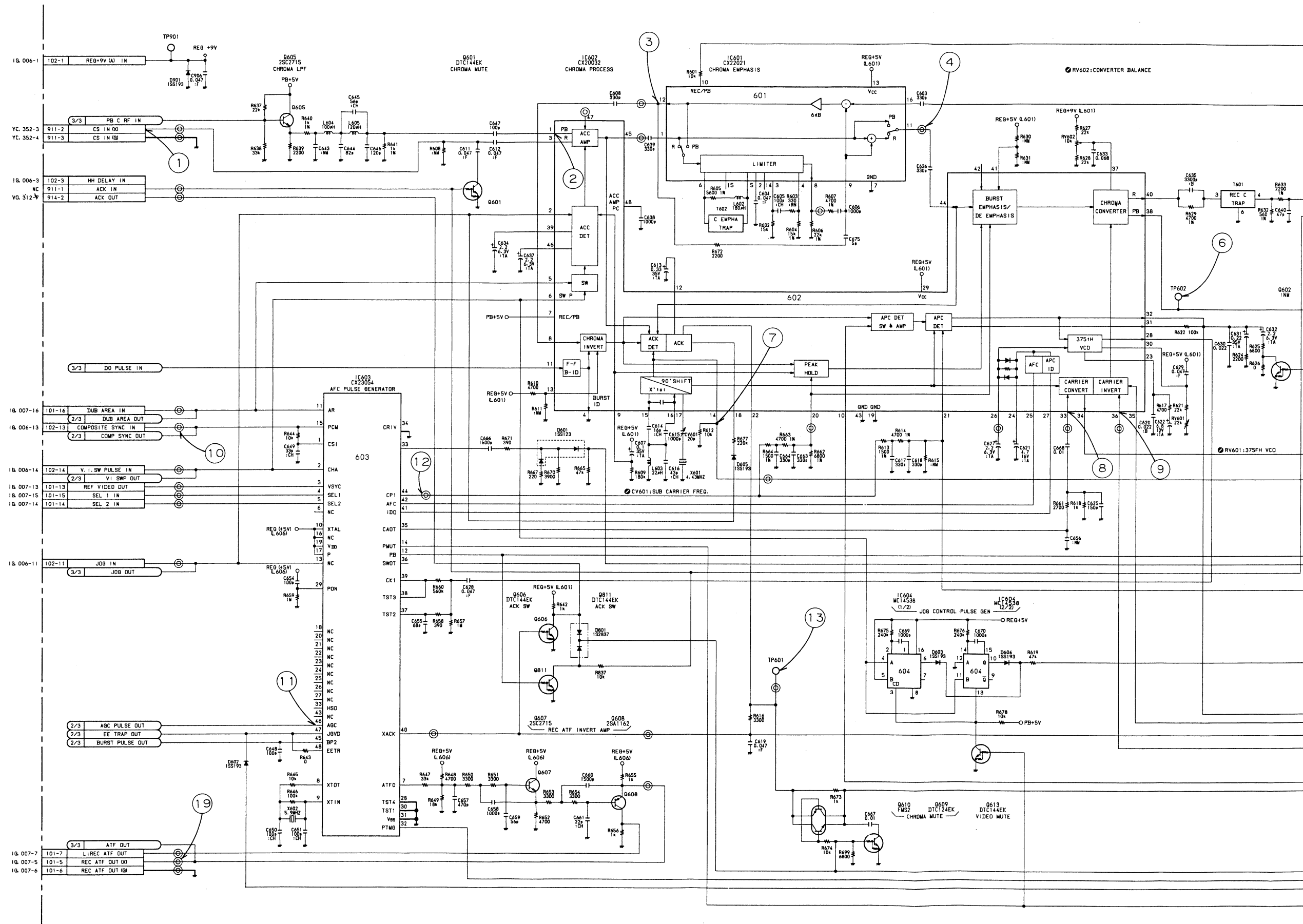
Measurement Condition

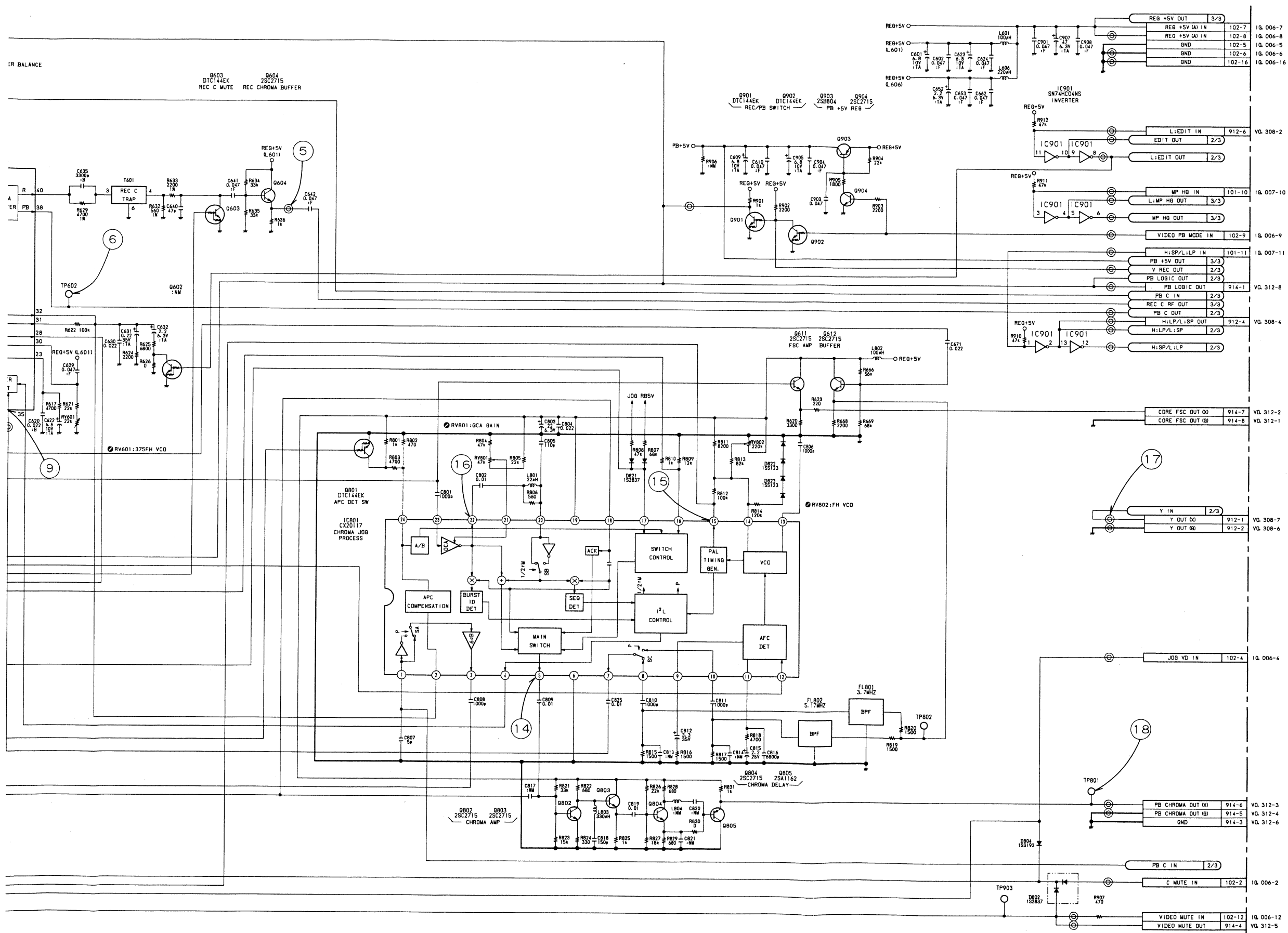
- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE
Alignment tape WR5-8CLE
(Color Bars Signal)



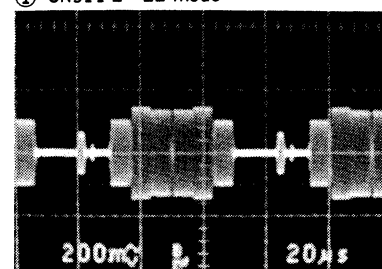
**FR-43**I-635-127-11, 12 (I)
EVO-9800P

NOTE: NM IS NOT MOUNT

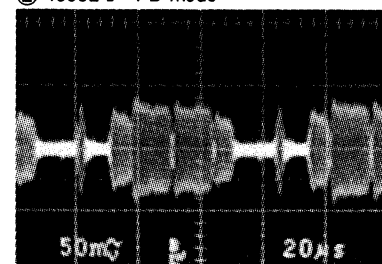




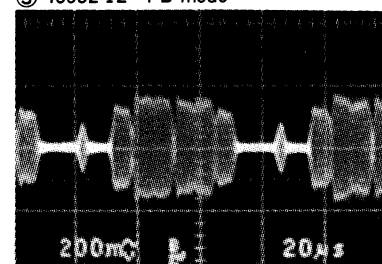
① CN911-2 EE mode



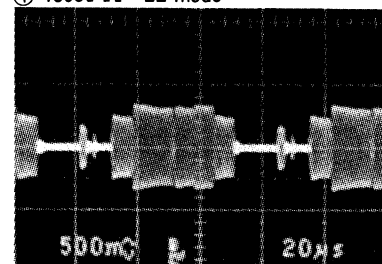
② IC602-1 PB mode



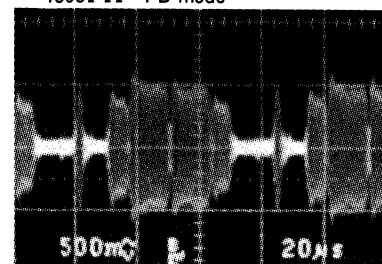
③ IC602-12 PB mode



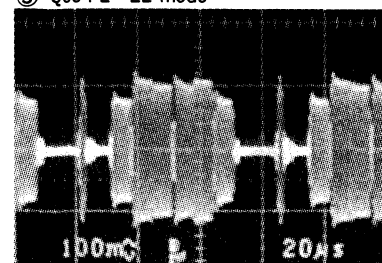
④ IC601-11 EE mode



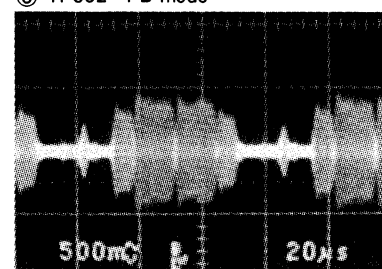
IC601-11 PB mode



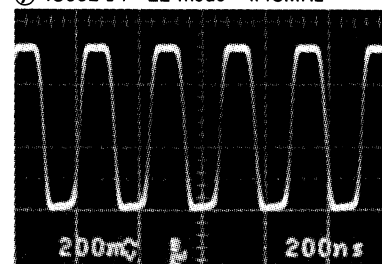
⑤ Q604-E EE mode



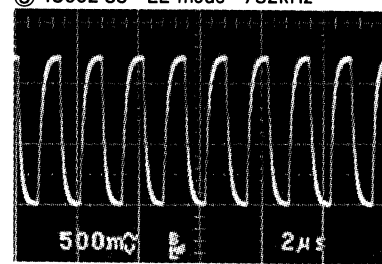
⑥ TP602 PB mode



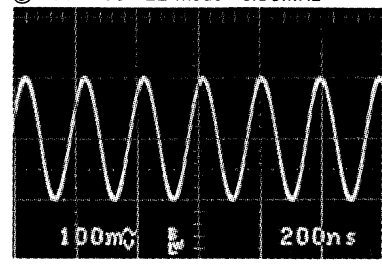
⑦ IC602-14 EE mode 4.43MHz



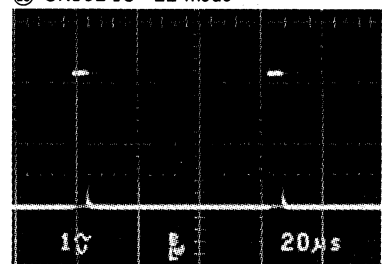
⑧ IC602-33 EE mode 732kHz



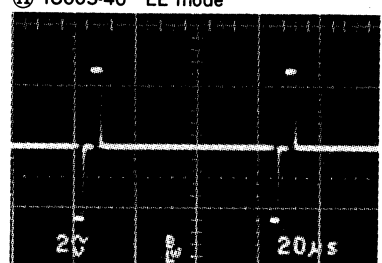
⑨ IC602-36 EE mode 5.16MHz



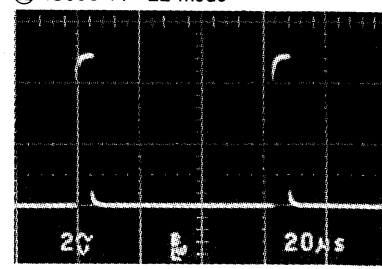
⑩ CN102-13 EE mode



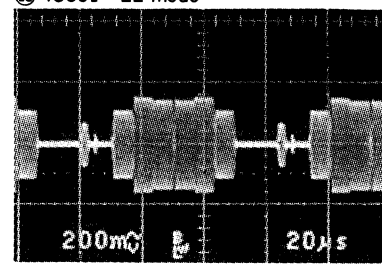
⑪ IC603-46 EE mode



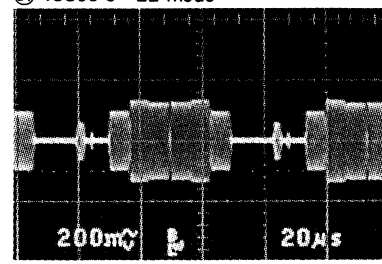
⑫ IC603-44 EE mode



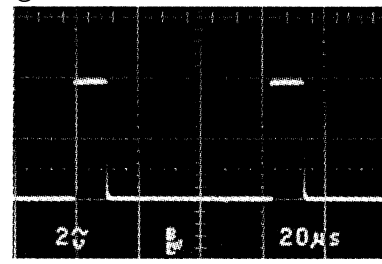
⑬ IC601 EE mode



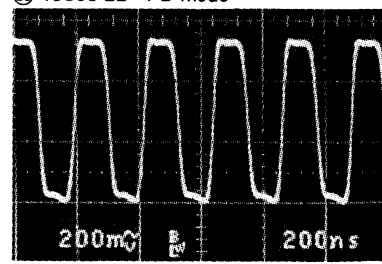
⑭ IC801-5 EE mode



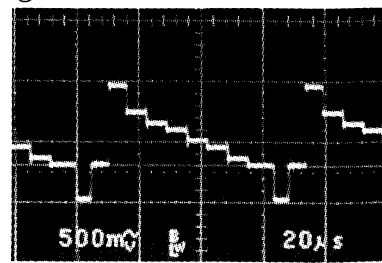
⑮ IC801-15 EE mode 15.625kHz



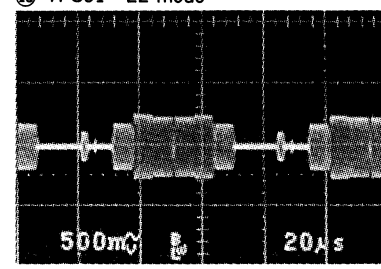
⑯ IC801-22 PB mode



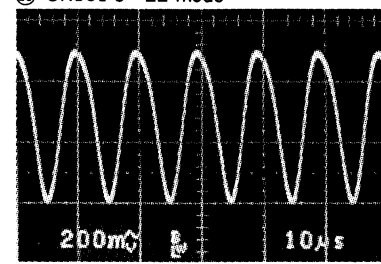
⑰ CN912-1 EE mode



⑱ TP801 EE mode

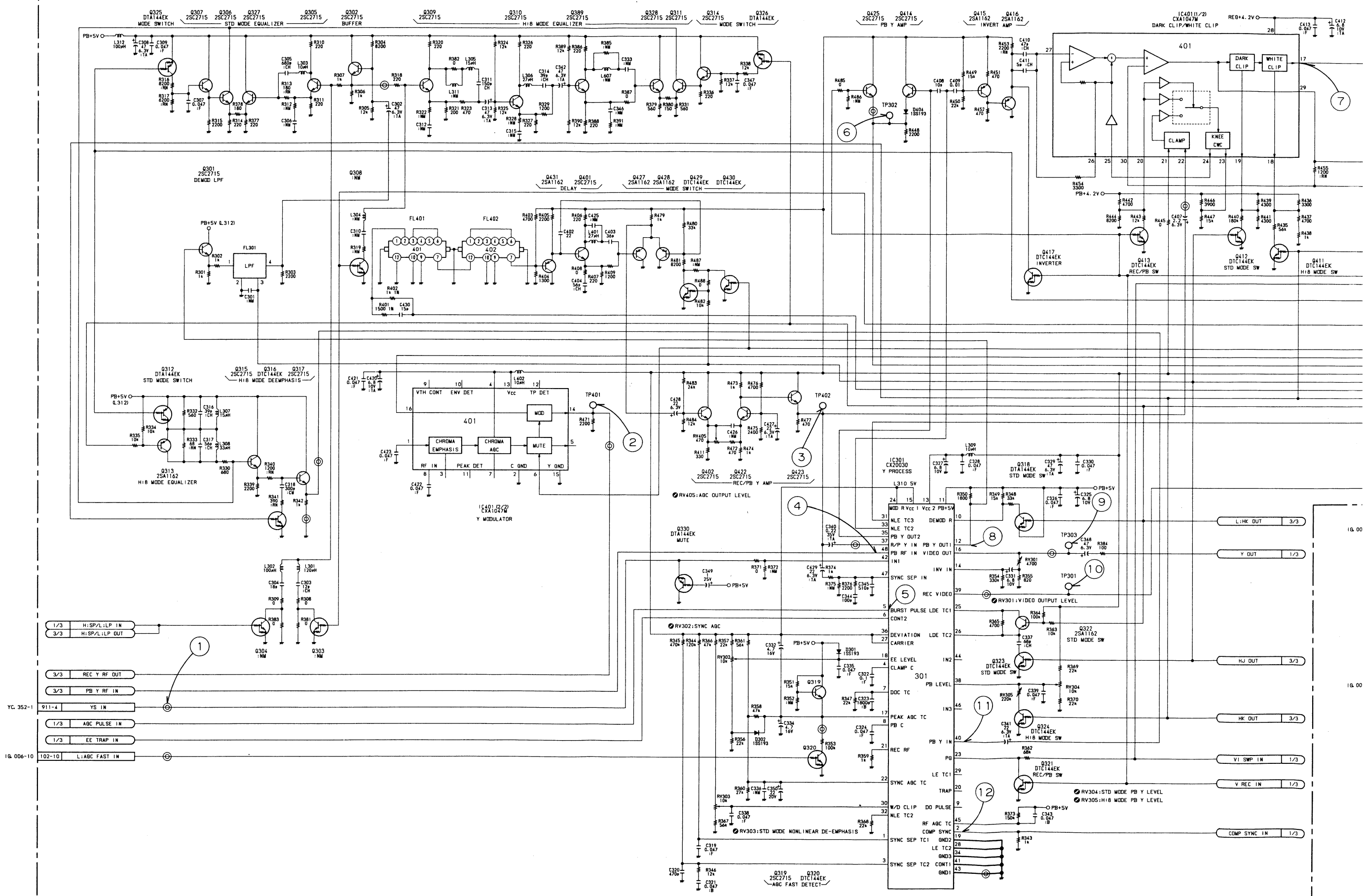


⑲ CN101-5 EE mode

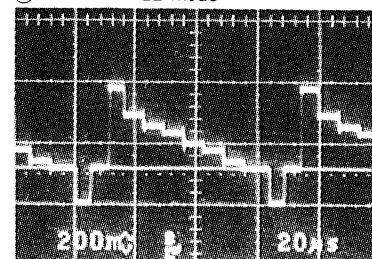


Measurement Condition

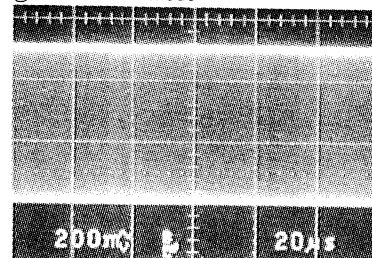
- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE (Color Bars Signal)



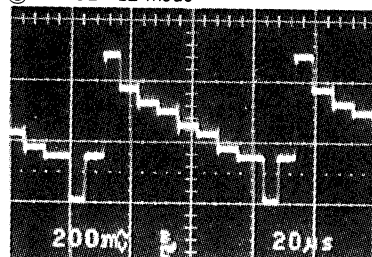
① CN911-4 EE mode



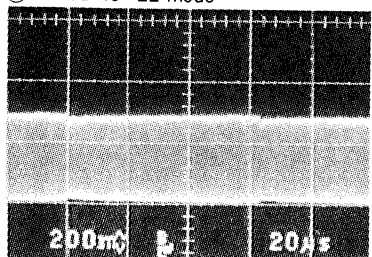
② TP401 EE mode



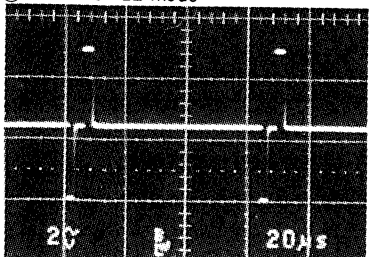
③ TP402 EE mode



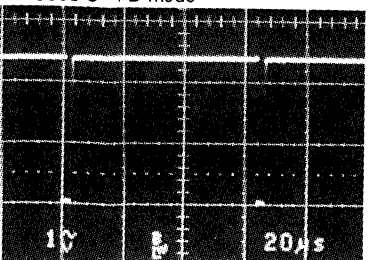
④ IC301-48 EE mode



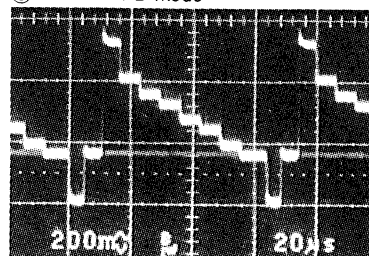
⑤ IC301-5 EE mode



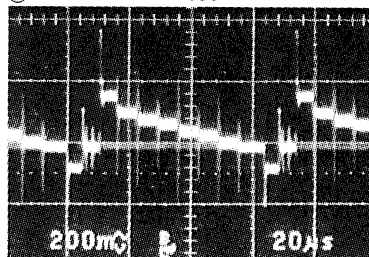
IC301-5 PB mode



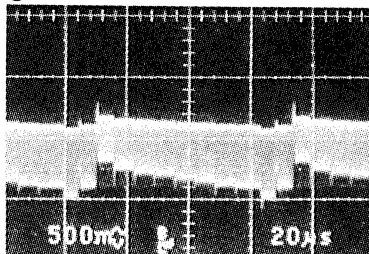
⑥ TP302 PB mode



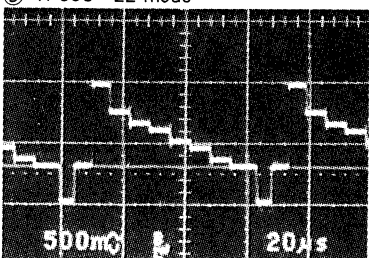
⑦ IC401-17 EE mode



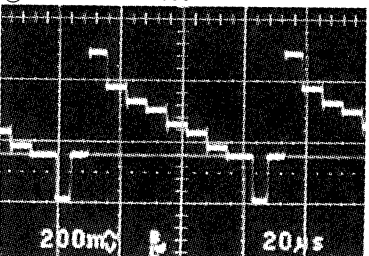
⑧ IC301-12 PB mode



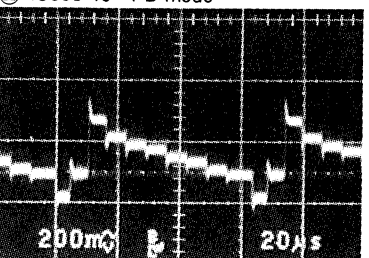
⑨ TP303 EE mode



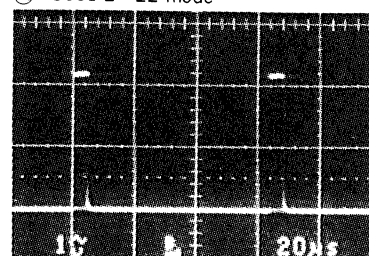
⑩ TP301 EE mode



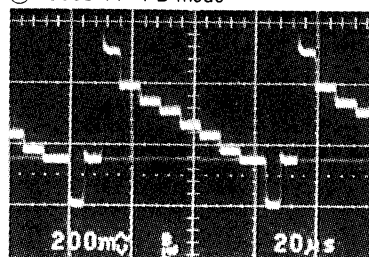
⑪ IC301-40 PB mode



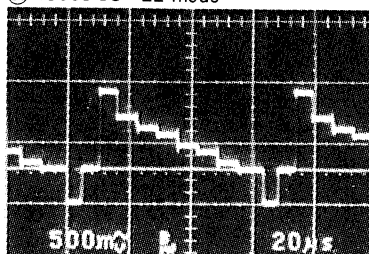
⑫ IC301-2 EE mode



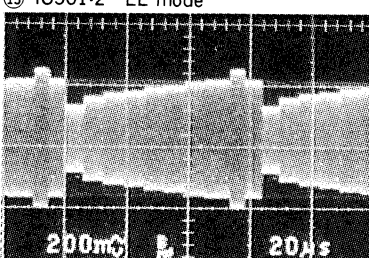
⑬ IC501-44 PB mode



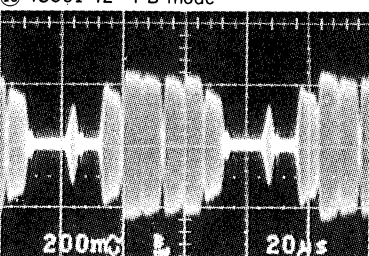
⑭ IC501-18 EE mode



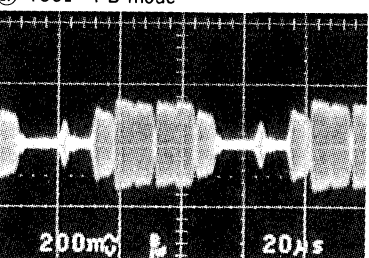
⑮ IC501-2 EE mode



⑯ IC501-42 PB mode



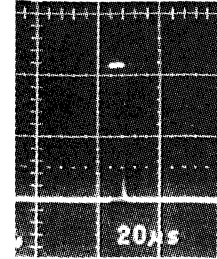
⑰ T501 PB mode



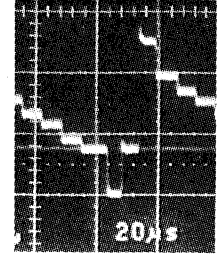
Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE
(Color Bars Signal)

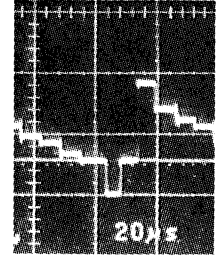
mode



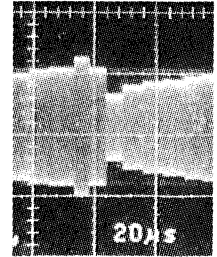
mode



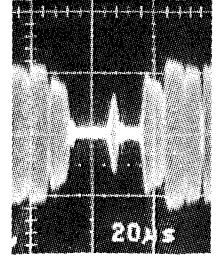
mode



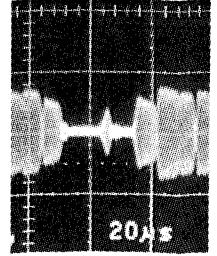
mode



mode

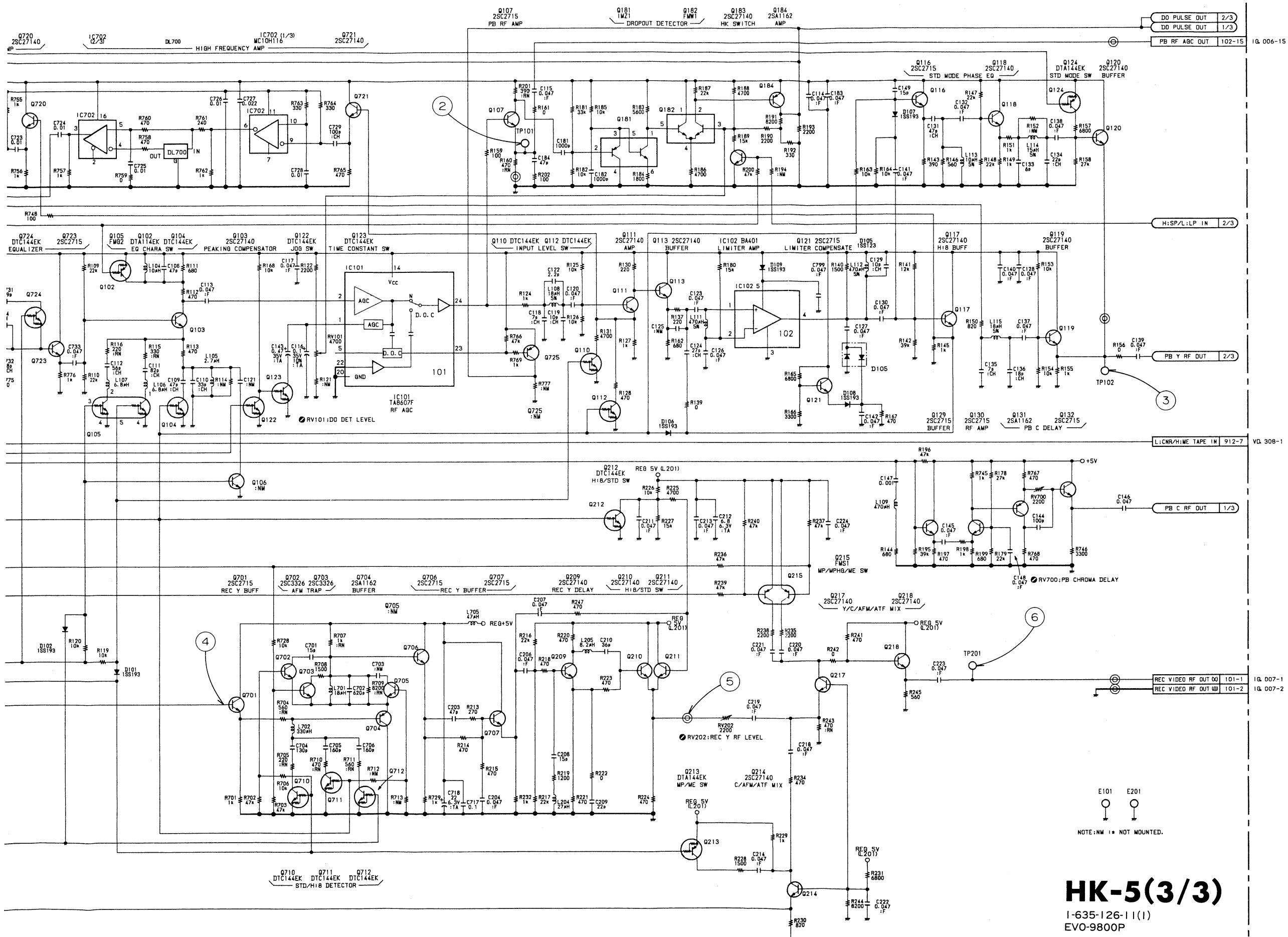


e



Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE
(Color Bars Signal)



HK-5(3/3)

I-635-126-11(1)
EVO-9800P

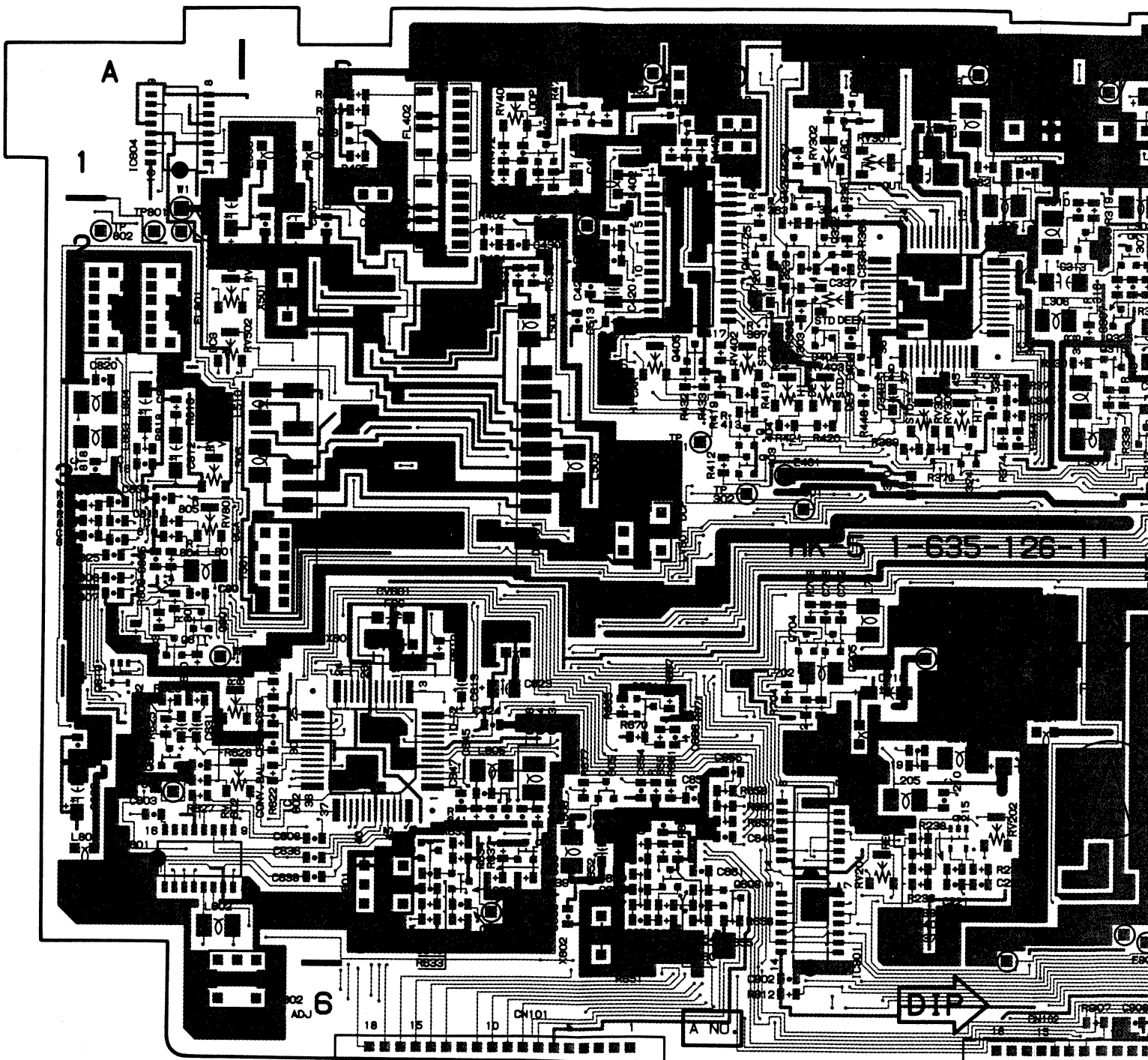
HK-5; Y/C VIDEO PROCESS

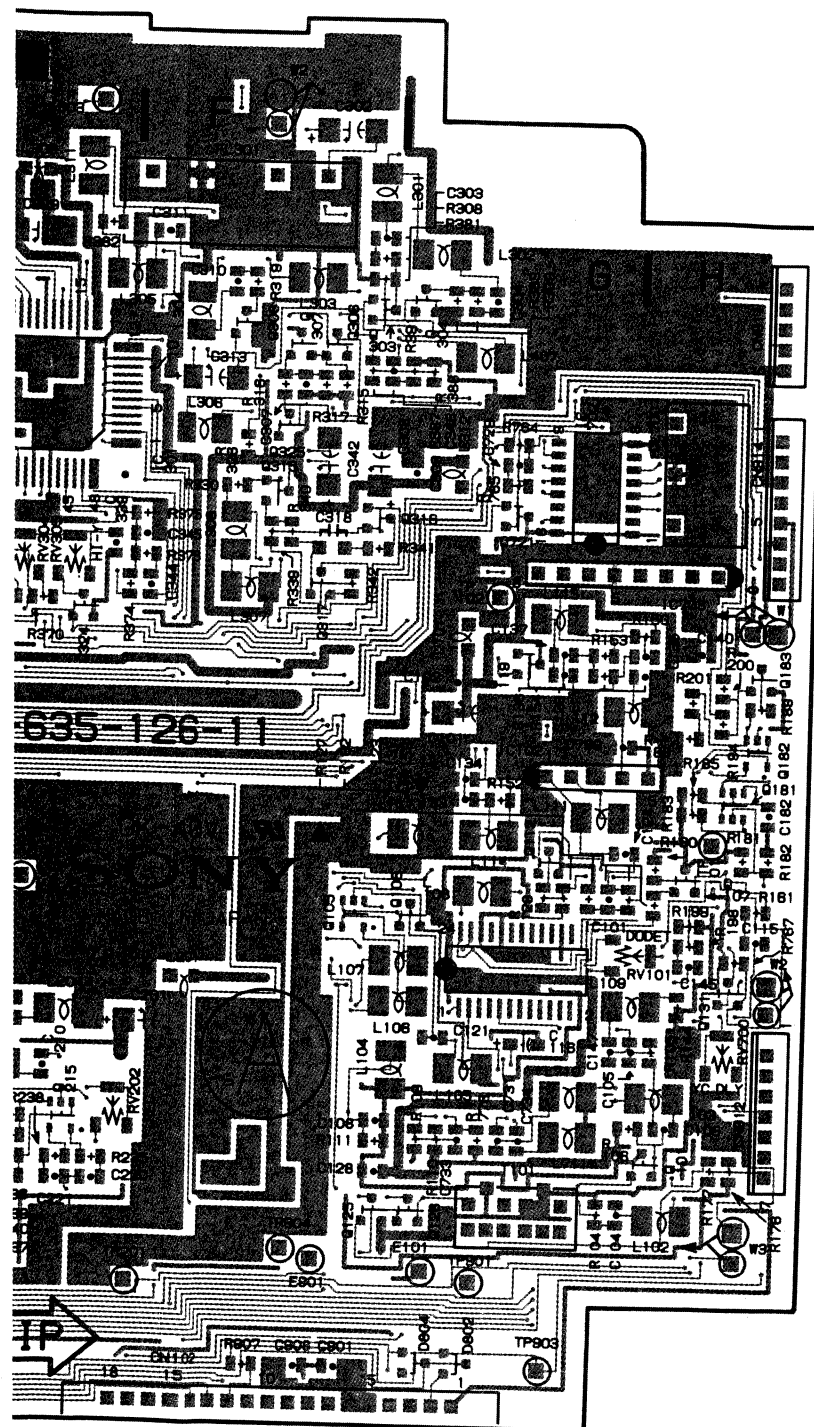
HK-5(1-635-126-11)A SIDE

| | | | |
|-------|-----|-------|-----|
| CF601 | A-4 | Q307 | F-2 |
| CF851 | G-4 | Q315 | F-2 |
| | | Q316 | G-2 |
| CN101 | C-6 | Q317 | F-3 |
| CN102 | F-6 | Q322 | E-2 |
| CN911 | H-2 | Q323 | D-2 |
| CN912 | H-5 | Q324 | E-3 |
| CN914 | H-2 | Q325 | F-2 |
| | | Q403 | D-3 |
| CV601 | B-4 | Q404 | D-3 |
| | | Q405 | D-2 |
| D301 | E-1 | Q413 | D-1 |
| D404 | E-2 | Q414 | E-2 |
| D601 | D-4 | Q417 | D-2 |
| D605 | C-5 | Q422 | C-1 |
| D802 | G-6 | Q423 | C-1 |
| D804 | G-6 | Q426 | D-1 |
| | | Q431 | B-1 |
| DL501 | C-3 | Q603 | B-5 |
| DL700 | H-2 | Q604 | C-5 |
| | | Q605 | C-5 |
| E101 | G-5 | Q607 | D-5 |
| E201 | E-4 | Q608 | D-5 |
| E401 | D-3 | Q610 | A-4 |
| E601 | B-5 | Q611 | A-4 |
| E901 | F-5 | Q704 | D-4 |
| | | Q721 | G-3 |
| | | Q801 | A-4 |
| FL301 | F-1 | | |
| FL401 | B-2 | | |
| FL402 | B-1 | RV101 | H-4 |
| FL801 | A-2 | RV201 | E-5 |
| FL802 | A-2 | RV202 | F-5 |
| | | RV301 | E-1 |
| IC101 | G-4 | RV302 | E-1 |
| IC102 | G-3 | RV303 | D-2 |
| IC301 | F-2 | RV304 | E-3 |
| IC401 | D-1 | RV305 | E-3 |
| IC601 | A-5 | RV401 | D-2 |
| IC602 | B-5 | RV402 | D-2 |
| IC604 | A-1 | RV403 | E-2 |
| IC702 | G-2 | RV404 | D-2 |
| IC703 | H-3 | RV405 | C-1 |
| IC901 | E-5 | RV501 | B-2 |
| IC902 | E-5 | RV502 | B-2 |
| | | RV700 | H-5 |
| LV501 | D-3 | RV801 | A-3 |
| | | RV802 | A-3 |
| Q101 | H-5 | | |
| Q105 | F-4 | T101 | G-5 |
| Q107 | H-4 | T501 | B-3 |
| Q112 | G-4 | T601 | B-5 |
| Q119 | G-3 | T602 | B-6 |
| Q125 | F-5 | | |
| Q126 | G-5 | TP101 | H-4 |
| Q131 | H-4 | TP102 | G-3 |
| Q181 | H-3 | TP201 | F-5 |
| Q182 | H-3 | TP301 | D-3 |
| Q215 | E-5 | TP302 | D-3 |
| Q306 | F-2 | TP303 | E-1 |

HK-5(1-635-126-11)B SIDE

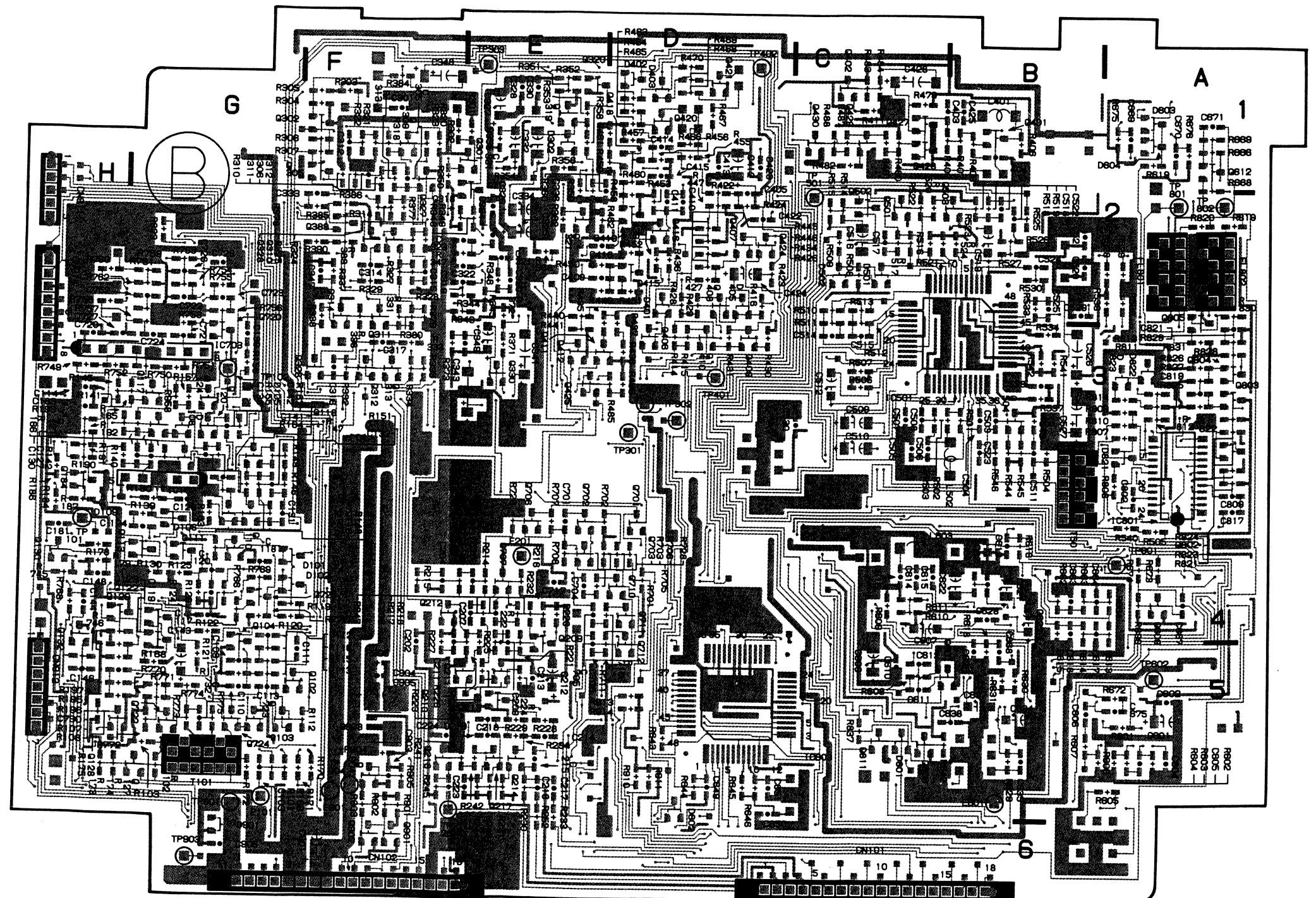
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|-------|-----|------|-----|------|-----|
| D101 | F-4 | Q311 | F-3 | Q811 | C-5 |
| D102 | F-4 | Q312 | F-3 | Q901 | F-6 |
| D105 | G-3 | Q313 | F-3 | Q902 | F-6 |
| D106 | G-4 | Q314 | F-2 | Q903 | F-5 |
| D107 | F-4 | Q318 | F-2 | Q904 | F-5 |
| D108 | G-3 | Q319 | E-1 | | |
| D109 | H-4 | Q320 | E-1 | | |
| D302 | E-1 | Q321 | E-2 | | |
| D401 | D-2 | Q326 | G-3 | | |
| D402 | D-1 | Q327 | F-2 | | |
| D403 | D-1 | Q328 | G-2 | | |
| D405 | D-2 | Q330 | E-3 | | |
| D501 | C-2 | Q389 | F-2 | | |
| D602 | D-5 | Q401 | B-1 | | |
| D603 | A-1 | Q402 | C-1 | | |
| D604 | A-1 | Q406 | D-3 | | |
| D801 | C-5 | Q407 | D-2 | | |
| D821 | A-3 | Q408 | D-2 | | |
| D822 | A-3 | Q409 | D-3 | | |
| D823 | A-3 | Q410 | D-3 | | |
| D901 | G-6 | Q411 | E-3 | | |
| | | Q412 | E-3 | | |
| IC501 | C-3 | Q415 | D-2 | | |
| IC603 | C-5 | Q416 | D-2 | | |
| IC801 | A-4 | Q418 | D-1 | | |
| | | Q419 | D-2 | | |
| | | Q420 | D-1 | | |
| Q102 | F-5 | Q421 | D-1 | | |
| Q103 | G-5 | Q424 | D-2 | | |
| Q104 | G-4 | Q425 | E-3 | | |
| Q110 | G-4 | Q427 | C-1 | | |
| Q111 | G-4 | Q428 | C-1 | | |
| Q113 | H-4 | Q429 | C-1 | | |
| Q116 | F-4 | Q430 | C-1 | | |
| Q117 | G-3 | Q501 | C-2 | | |
| Q118 | F-3 | Q502 | C-1 | | |
| Q120 | G-3 | Q503 | C-2 | | |
| Q121 | H-3 | Q504 | B-3 | | |
| Q122 | G-4 | Q601 | B-5 | | |
| Q123 | G-4 | Q606 | C-5 | | |
| Q124 | G-3 | Q609 | A-4 | | |
| Q127 | G-5 | Q612 | A-1 | | |
| Q128 | H-5 | Q701 | D-3 | | |
| Q129 | H-4 | Q702 | E-3 | | |
| Q130 | H-4 | Q703 | D-4 | | |
| Q132 | H-5 | Q706 | E-3 | | |
| Q184 | H-3 | Q707 | E-4 | | |
| Q209 | E-4 | Q710 | D-4 | | |
| Q210 | F-5 | Q711 | D-4 | | |
| Q211 | F-5 | Q712 | D-5 | | |
| Q212 | F-4 | Q720 | G-2 | | |
| Q213 | E-5 | Q722 | G-5 | | |
| Q214 | E-5 | Q723 | G-5 | | |
| Q217 | E-5 | Q724 | G-5 | | |
| Q218 | F-5 | Q725 | F-4 | | |
| Q301 | E-1 | Q802 | A-4 | | |
| Q302 | G-1 | Q803 | A-3 | | |
| Q305 | G-1 | Q804 | A-3 | | |
| Q309 | F-1 | Q805 | A-2 | | |
| Q310 | G-2 | | | | |





HK-5 - A SIDE-
1-635-126-11(1)
EVO-9800P

A Side is the same as COMPONENT Side



HK-5 - B SIDE-
1-635-126-11(1)
EVO-9800P

B Side is the same as SOLDER Side



MB-19; PCM AUDIO

MB-19(1-630-908-13)C

CN601 F-5
CN602 F-3
CN603 E-1
CN605 B-1
CN606 A-1
CN923 F-2
CN924 D-1

IC602 C-3
IC671 E-4

T603 E-5
T651 E-1
T661 E-3

TP601 C-1

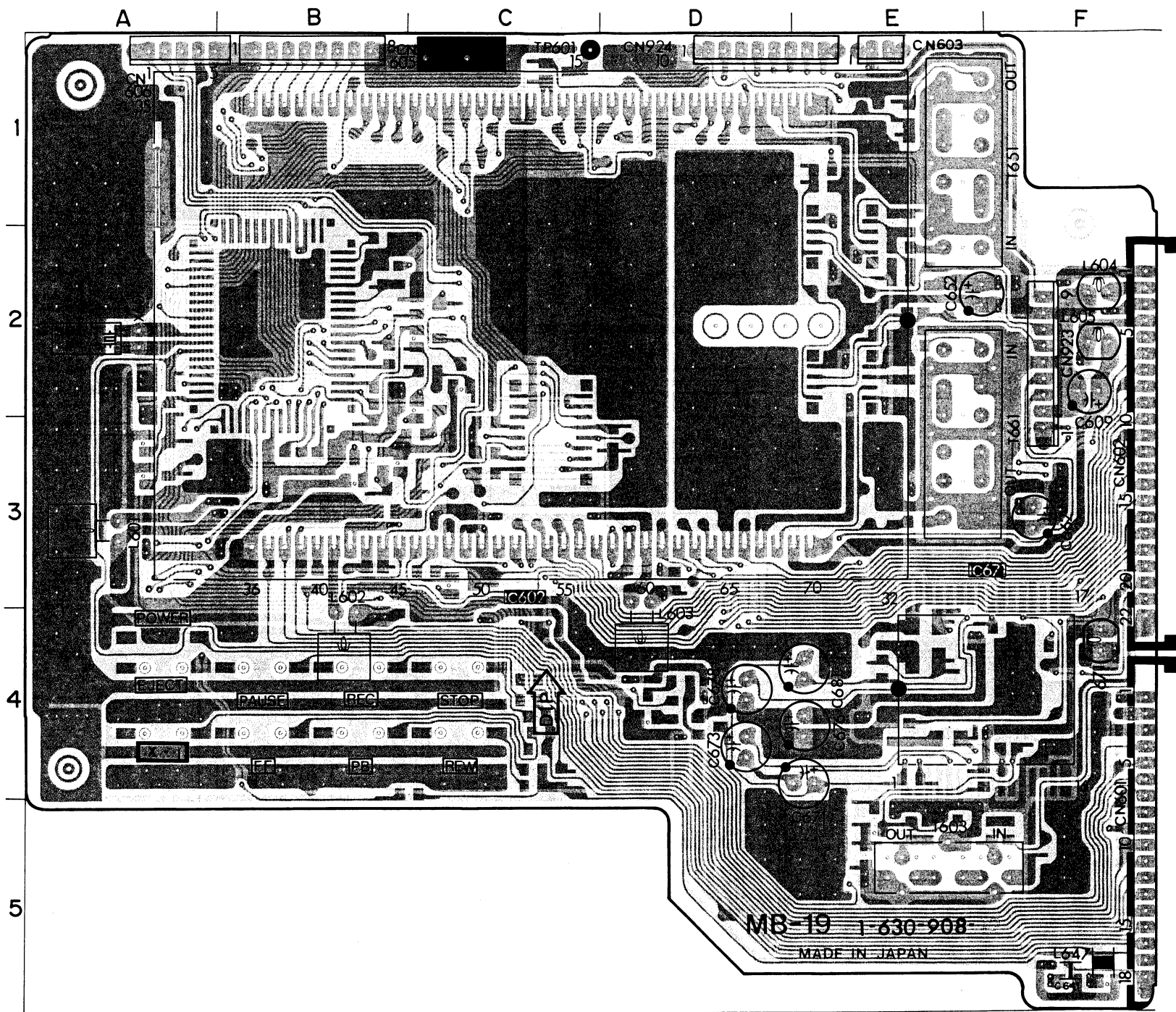
MB-19(1-630-908-13)S

D601 C-3
D602 C-2
D603 C-2
D604 C-1
D641 F-5
D642 F-5

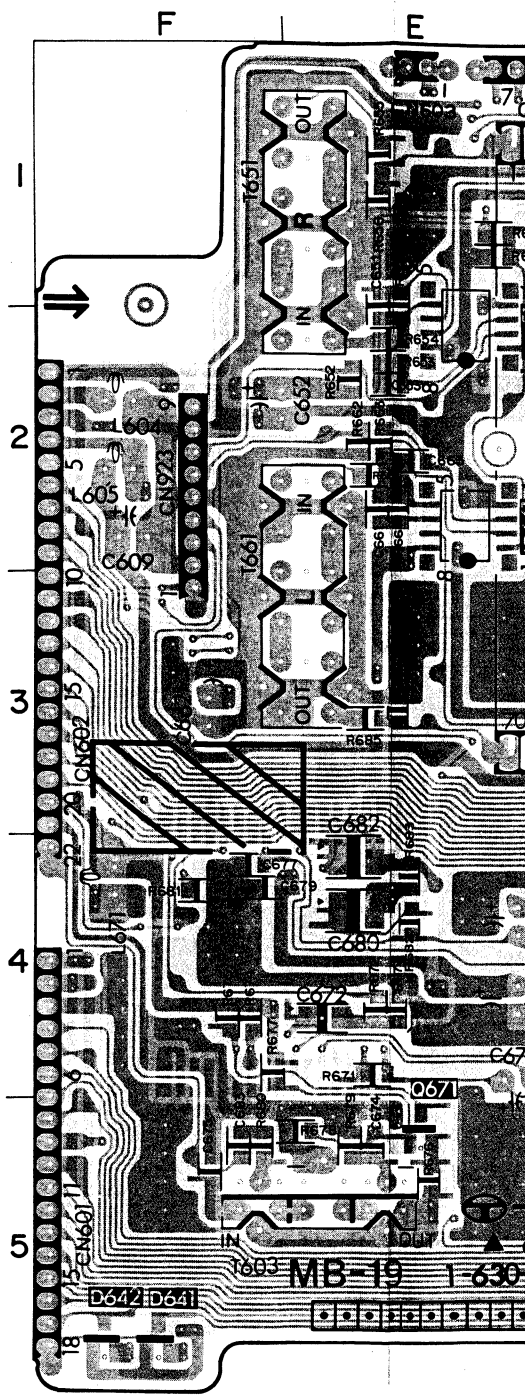
IC601 B-2
IC603 C-2
IC651 E-2
IC661 E-2

Q601 B-3
Q602 A-3
Q603 A-3
Q604 C-2
Q605 C-2
Q606 C-3
Q607 B-3
Q608 D-4
Q609 D-4
Q671 E-5

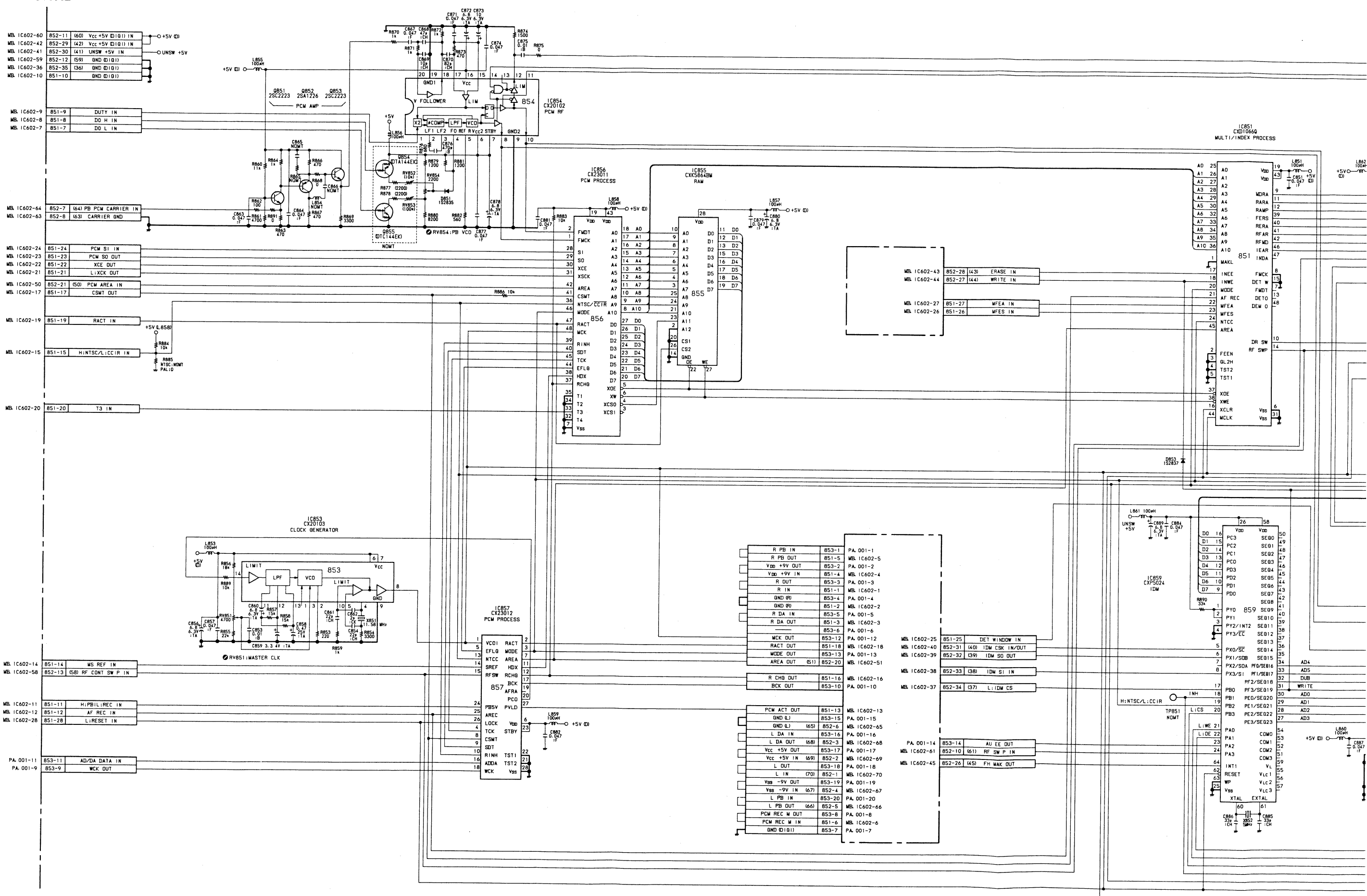
S641 A-4
S642 B-4
S643 B-4
S644 C-4
S645 C-4
S646 B-4
S647 B-4
S648 A-4
S649 A-4

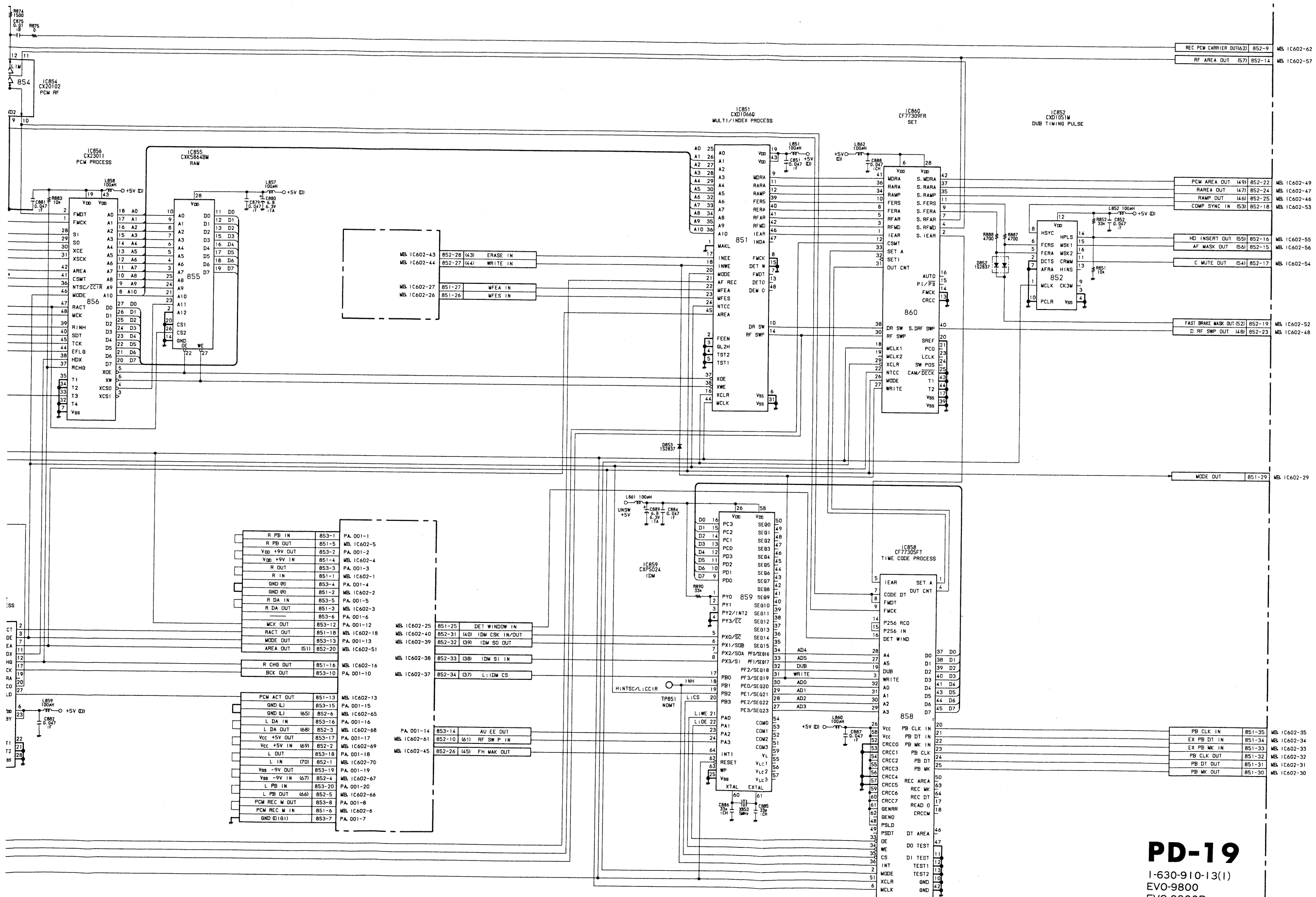


MB-19 —COMPONENT SIDE—
1-630-908-13(1)
EVO-9800
EVO-9800P

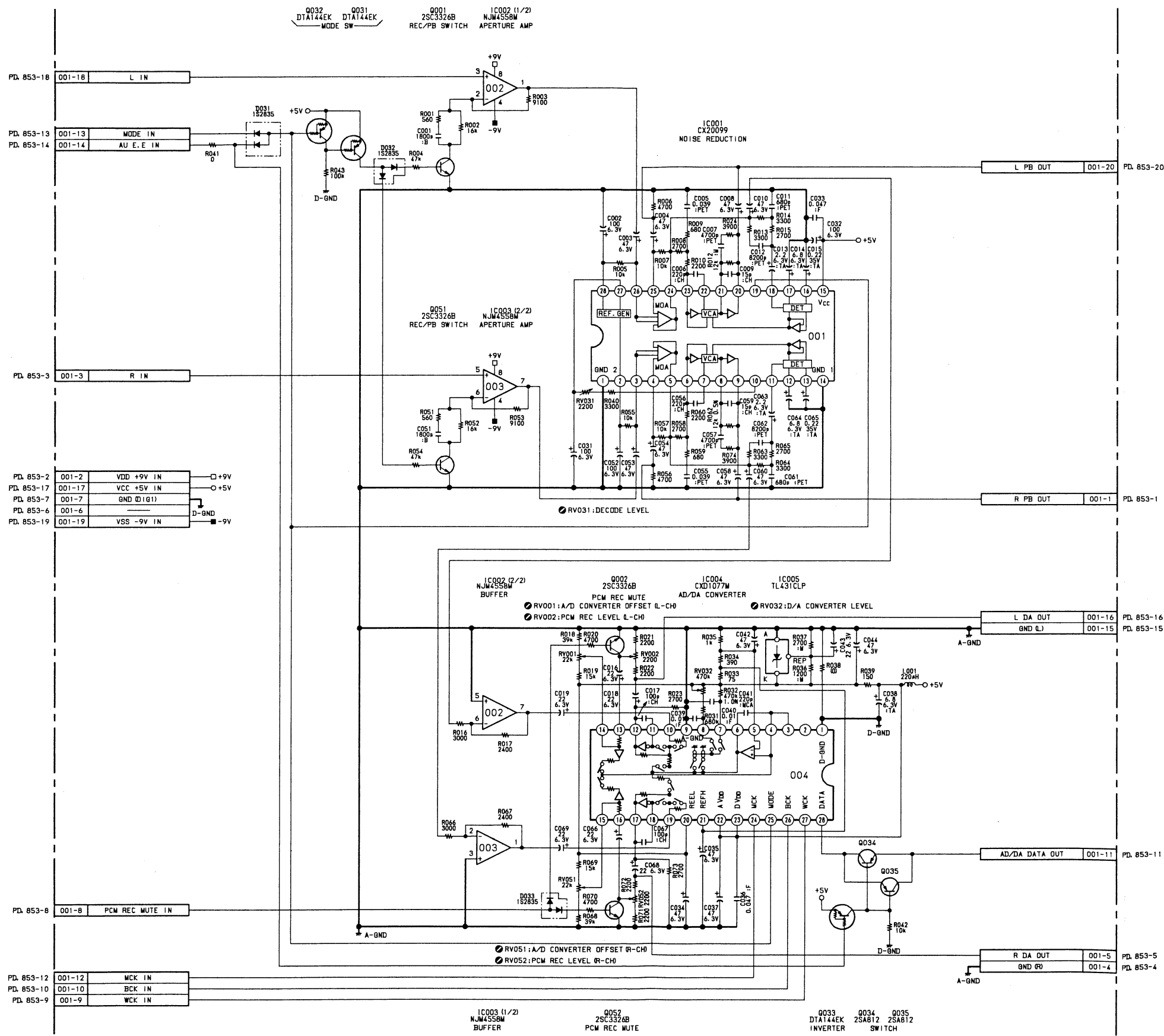


PD-19; PCM AUDIO DIGITAL





PD-19
I-630-910-13(1)
EVO-9800
EVO-9800P



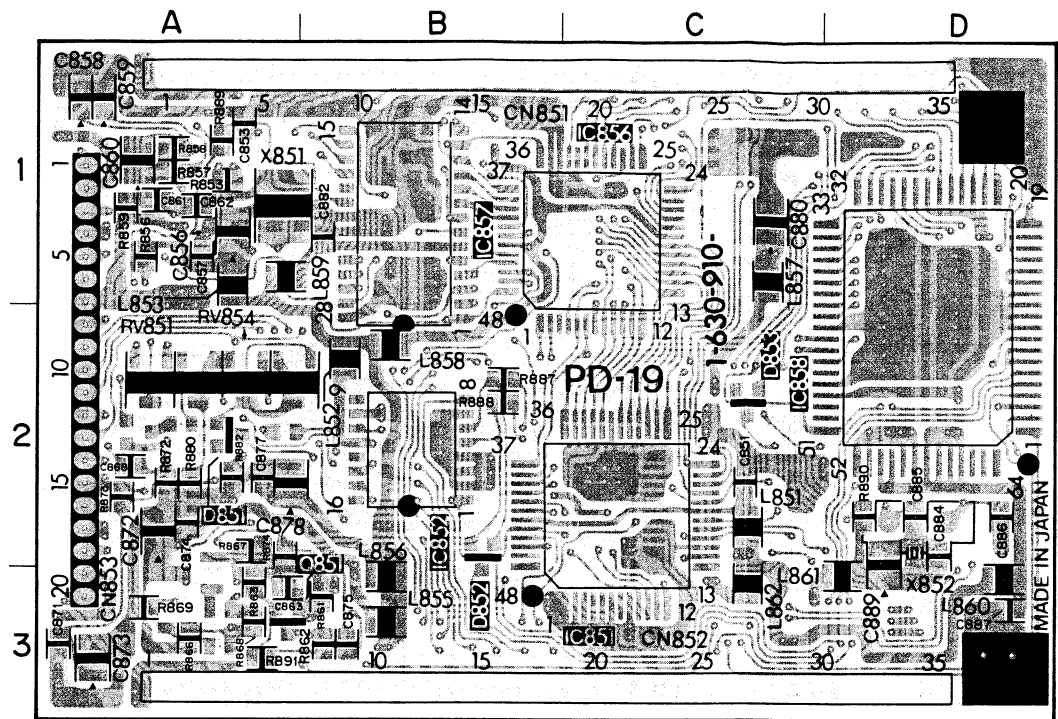
PD-19(1)
CN851
CN852
CN853
D851
D852
D853
IC851
IC852
IC856
IC857
IC858
Q851
RV851
RV854
X851
X852

PA-27(1)
CN001
D033
IC001
IC002
IC003
IC004
IC005
RV001
RV002
RV031
RV032
RV051
RV052

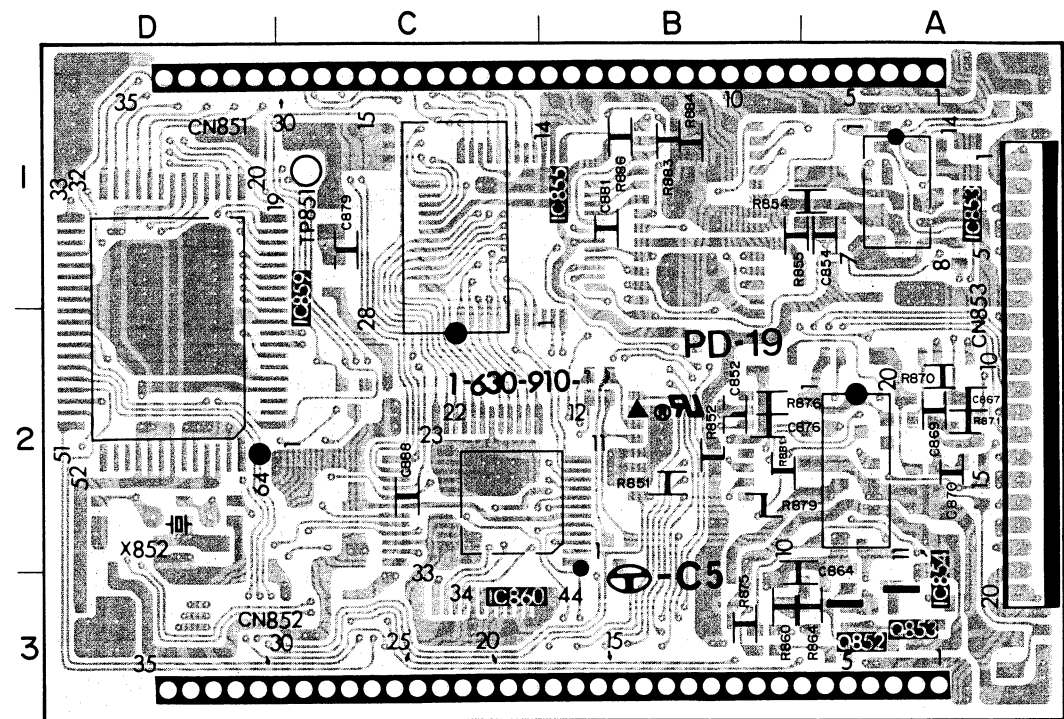
PA-27
I-630-909-13(1)
EVO-9800
EVO-9800P

PD-19; PCM AUDIO DIGITAL
PA-27; PCM AUDIO ANALOG

| PD-19(1-630-910-13)C | | PD-19(1-630-910-13)S | |
|----------------------|-----|----------------------|-----|
| CN851 | B-1 | IC853 | A-1 |
| CN852 | C-3 | IC854 | A-2 |
| CN853 | A-2 | IC855 | C-1 |
| | | IC859 | D-1 |
| D851 | A-2 | IC860 | C-2 |
| D852 | B-2 | | |
| D853 | C-2 | Q852 | A-3 |
| | | Q853 | A-3 |
| IC851 | C-2 | | |
| IC852 | B-2 | TP851 | C-1 |
| IC856 | C-1 | | |
| IC857 | B-1 | | |
| IC858 | D-2 | | |
| Q851 | A-3 | | |
| RV851 | A-2 | | |
| RV854 | A-2 | | |
| X851 | A-1 | | |
| X852 | D-2 | | |

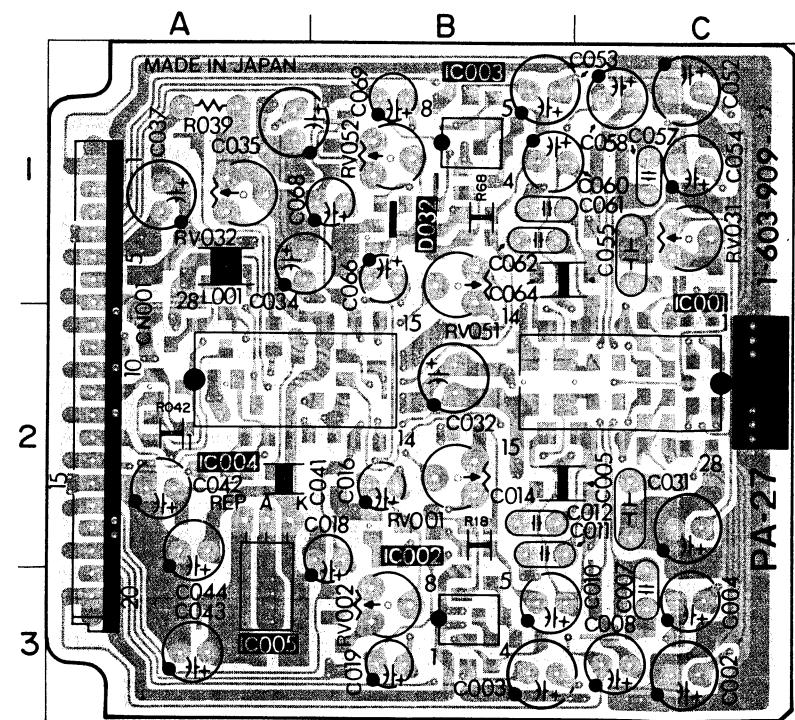


PD-19 — COMPONENT SIDE —
1-630-910-13(1)
EVO-9800

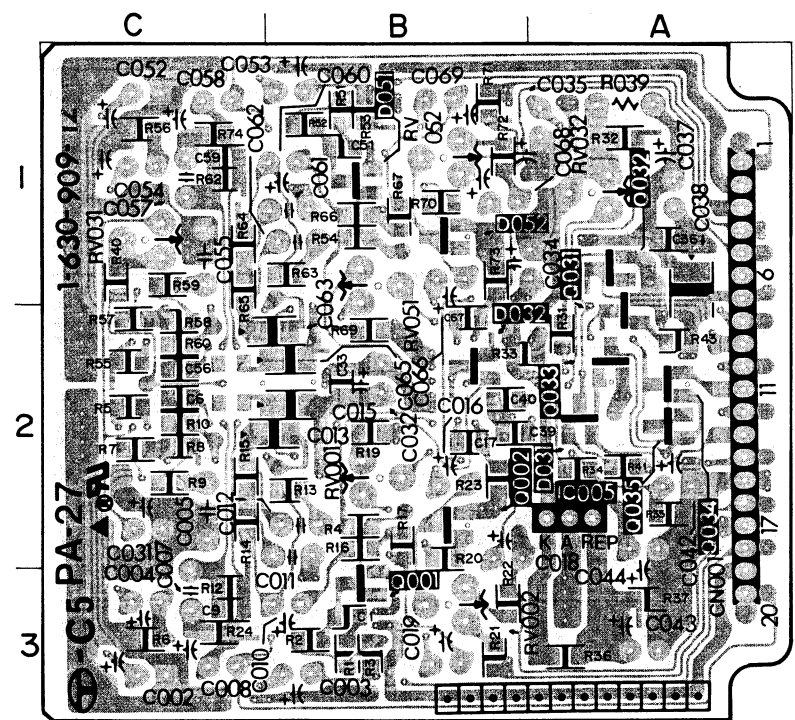


PD-19 — SOLDERING SIDE —
1-630-910-13(1)
EVO-9800

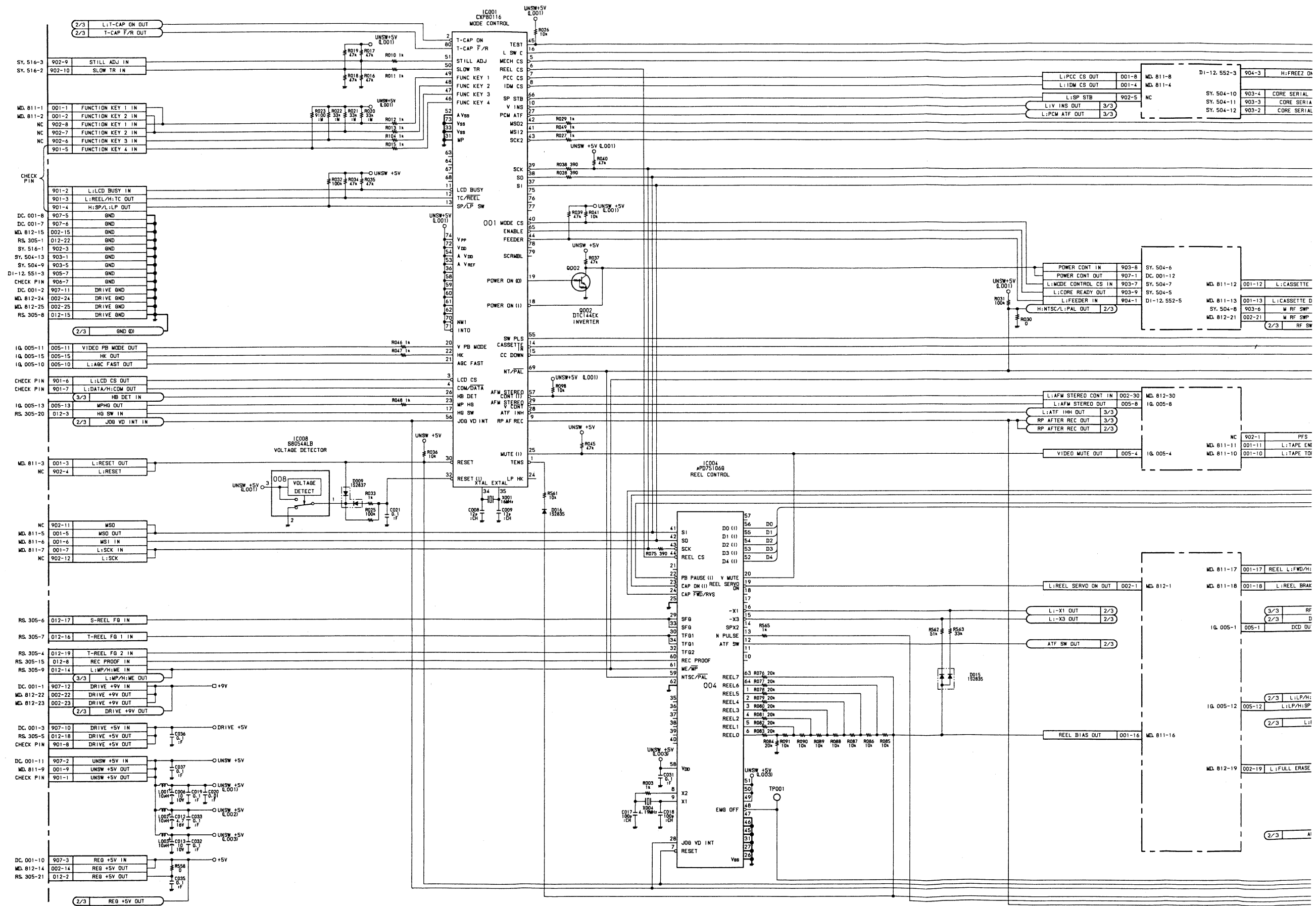
| PA-27(1-630-909-13)C | | PA-27(1-630-909-13)S | |
|----------------------|-----|----------------------|-----|
| CN001 | A-2 | D031 | A-2 |
| D033 | B-1 | D032 | B-2 |
| IC001 | C-2 | Q001 | B-3 |
| IC002 | B-3 | Q002 | B-2 |
| IC003 | B-1 | Q031 | A-1 |
| IC004 | A-2 | Q032 | A-1 |
| IC005 | A-2 | Q033 | A-2 |
| | | Q034 | A-2 |
| | | Q035 | A-2 |
| | | Q051 | B-1 |
| | | Q052 | B-1 |
| RV001 | B-2 | | |
| RV002 | B-3 | | |
| RV031 | C-1 | | |
| RV032 | A-1 | | |
| RV051 | B-1 | | |
| RV052 | B-1 | | |

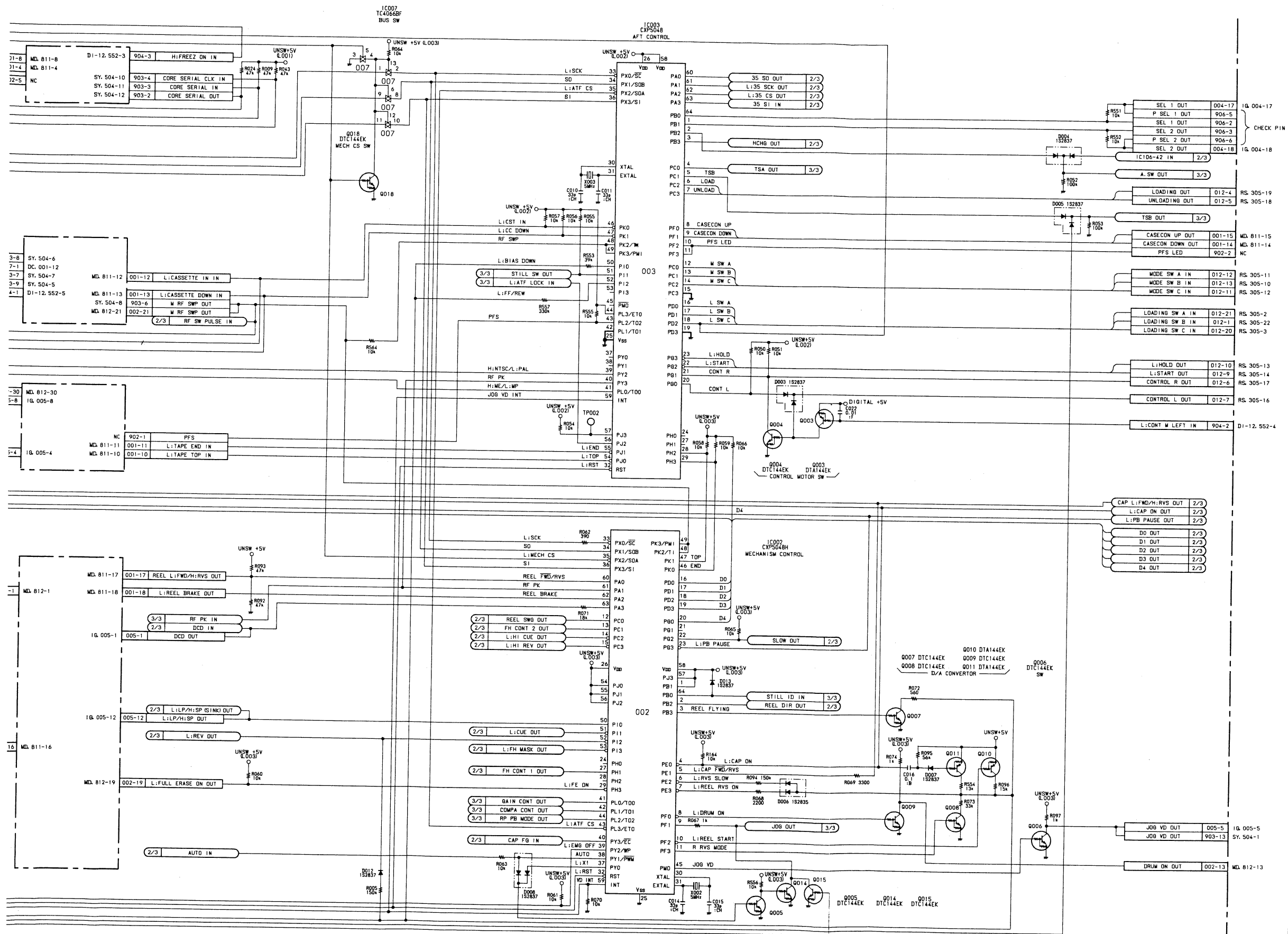


PA-27 — COMPONENT SIDE —
1-630-909-13(1)
EVO-9800



PA-27 — SOLDERING SIDE —
1-630-909-13(1)
EVO-9800

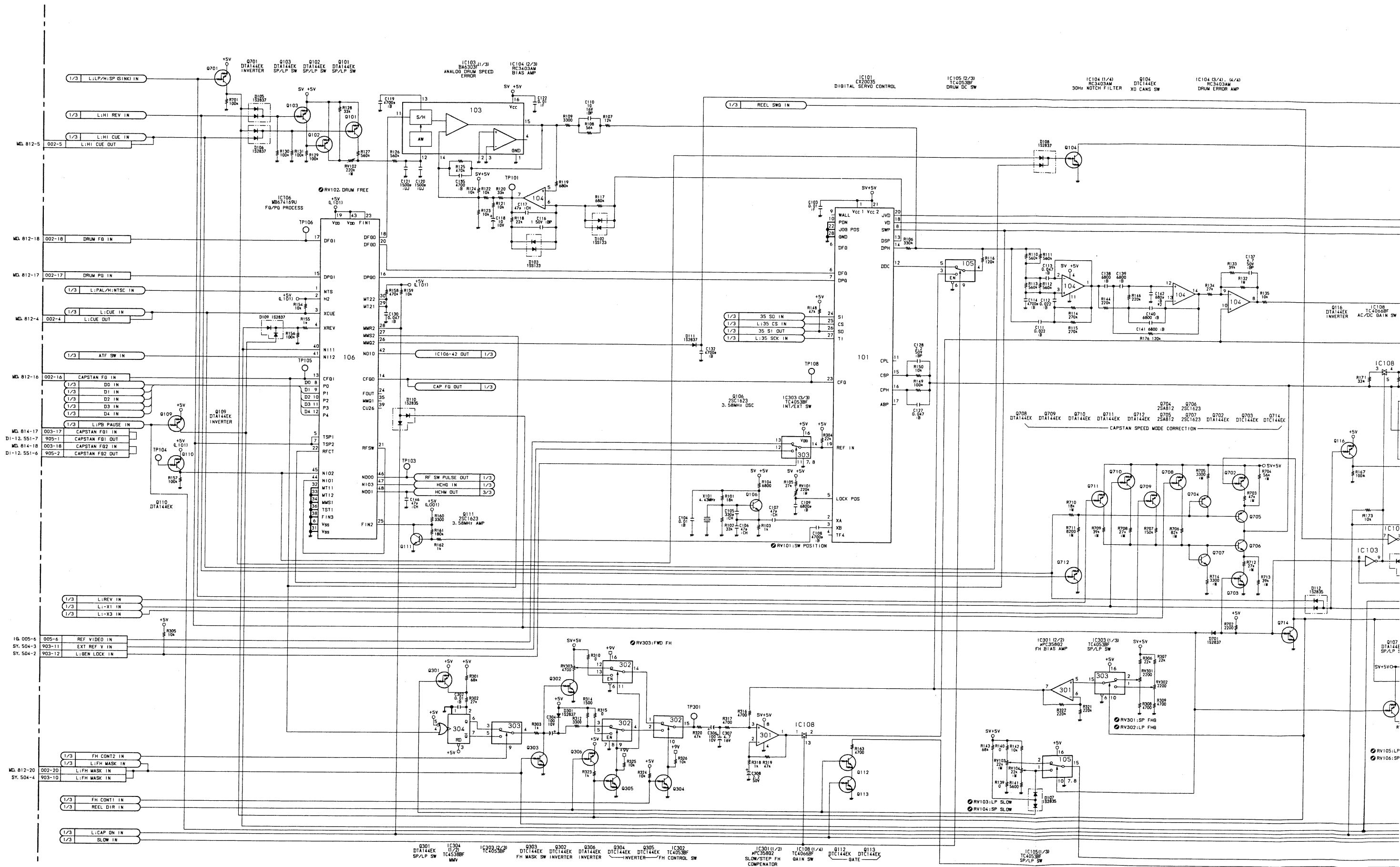


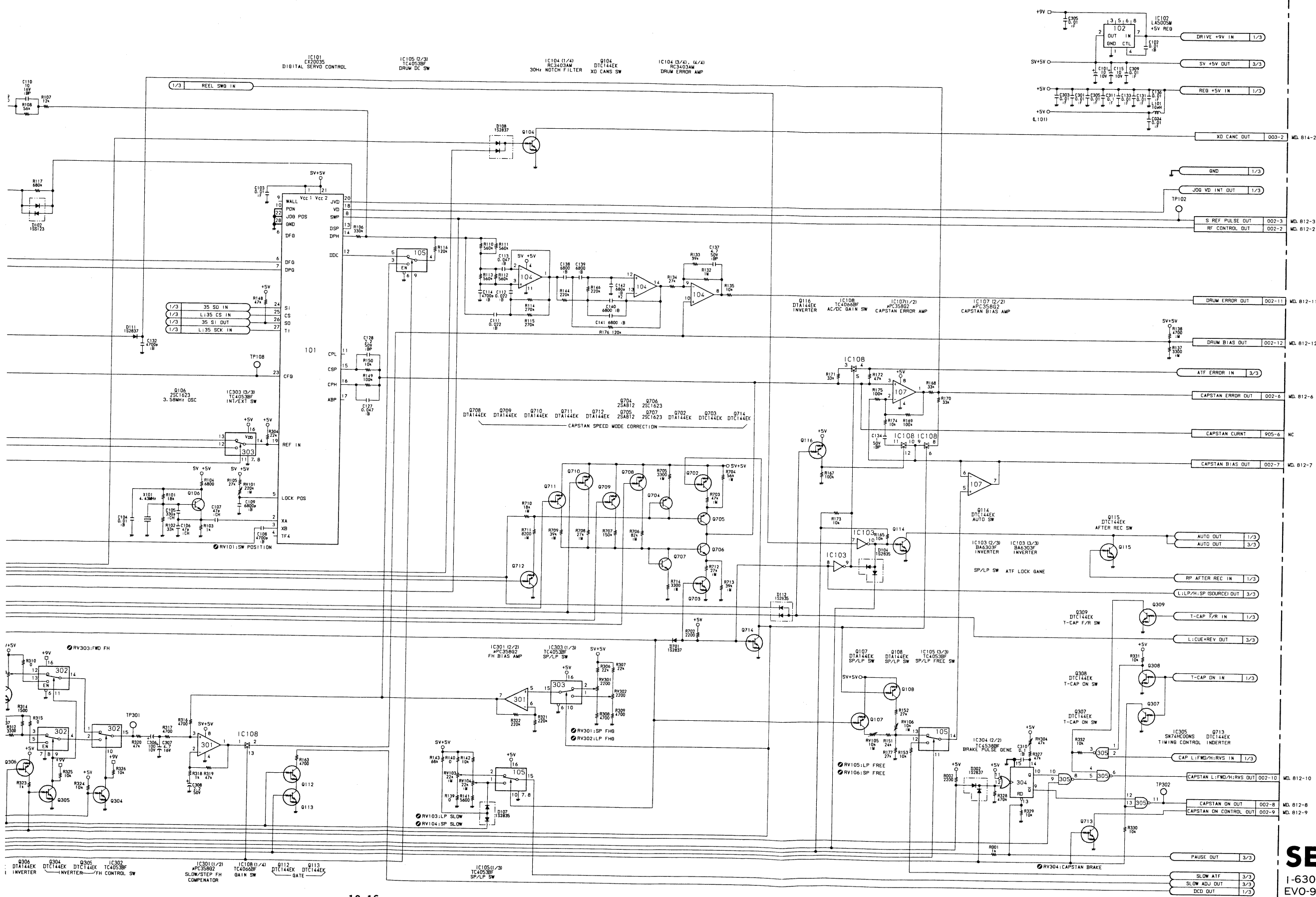


SE-10P(1/3)

I-630-906-14(1)
EVO-9800P

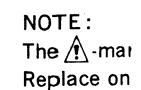
SE-10P (2/3); DRUM/CAPSTAN SERVO



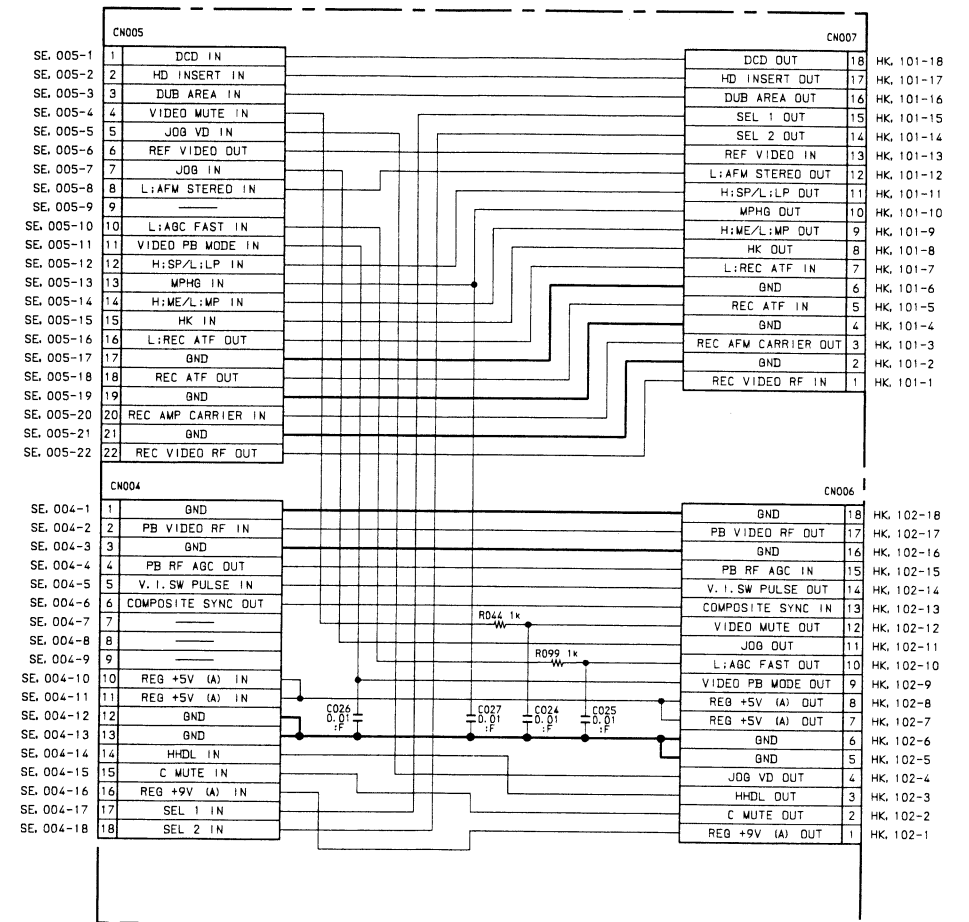
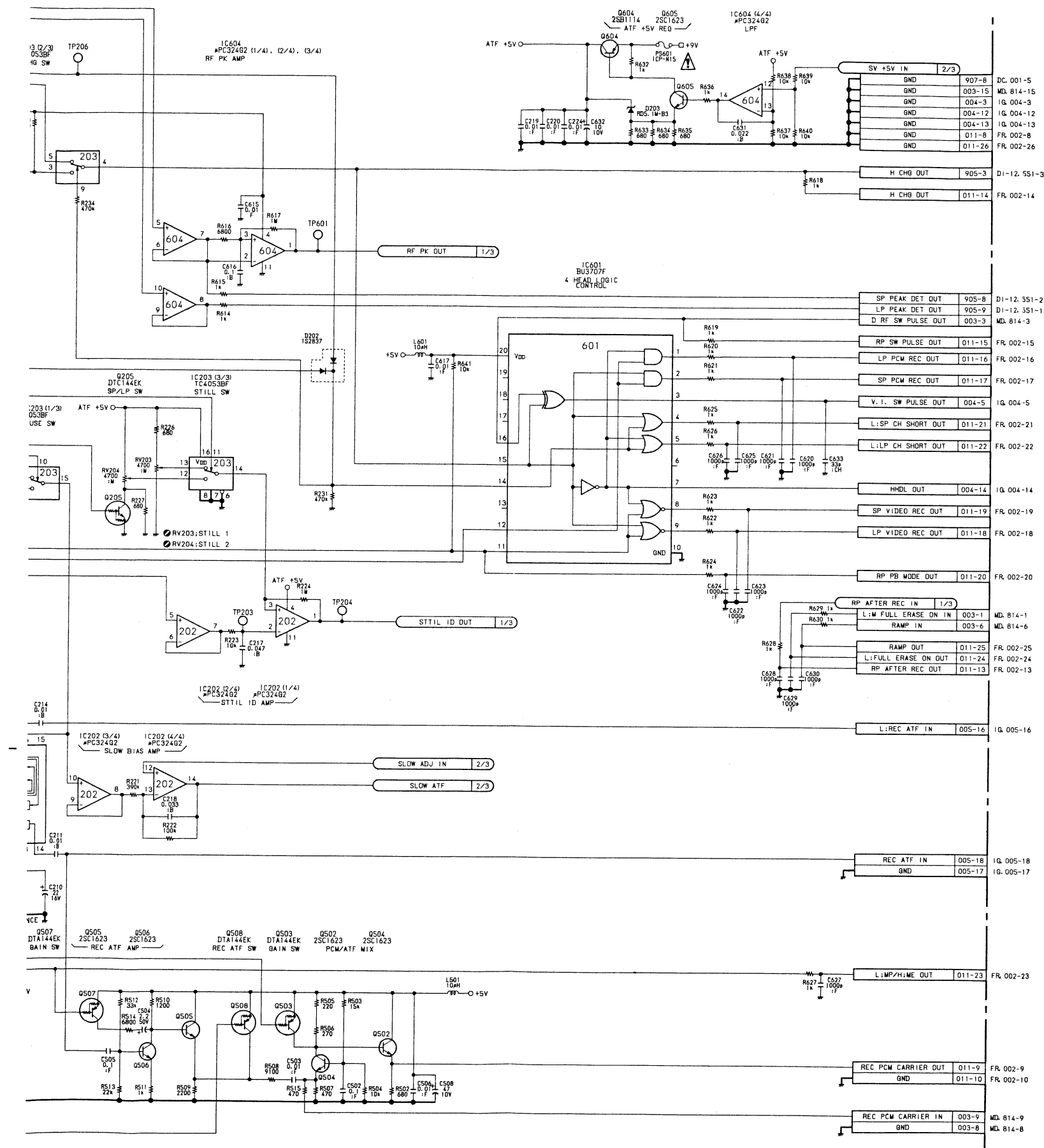


SE-10P(2/3)
 I-630-906-14(1)
 EVO-9800P

SE-10P (3/3); ATF SERVO
IG-4; TERMINAL




SE-1
1-630-906-14
EVO-9800P



IG-4

I-630-904-14(1)
EVO-9800
EVO-9800P

NOTE:
The -marked components are critical to safety.
Replace only with same components as specified.

SE-1 OP(3/3)

I-630-906-14(1)
EVO-9800P

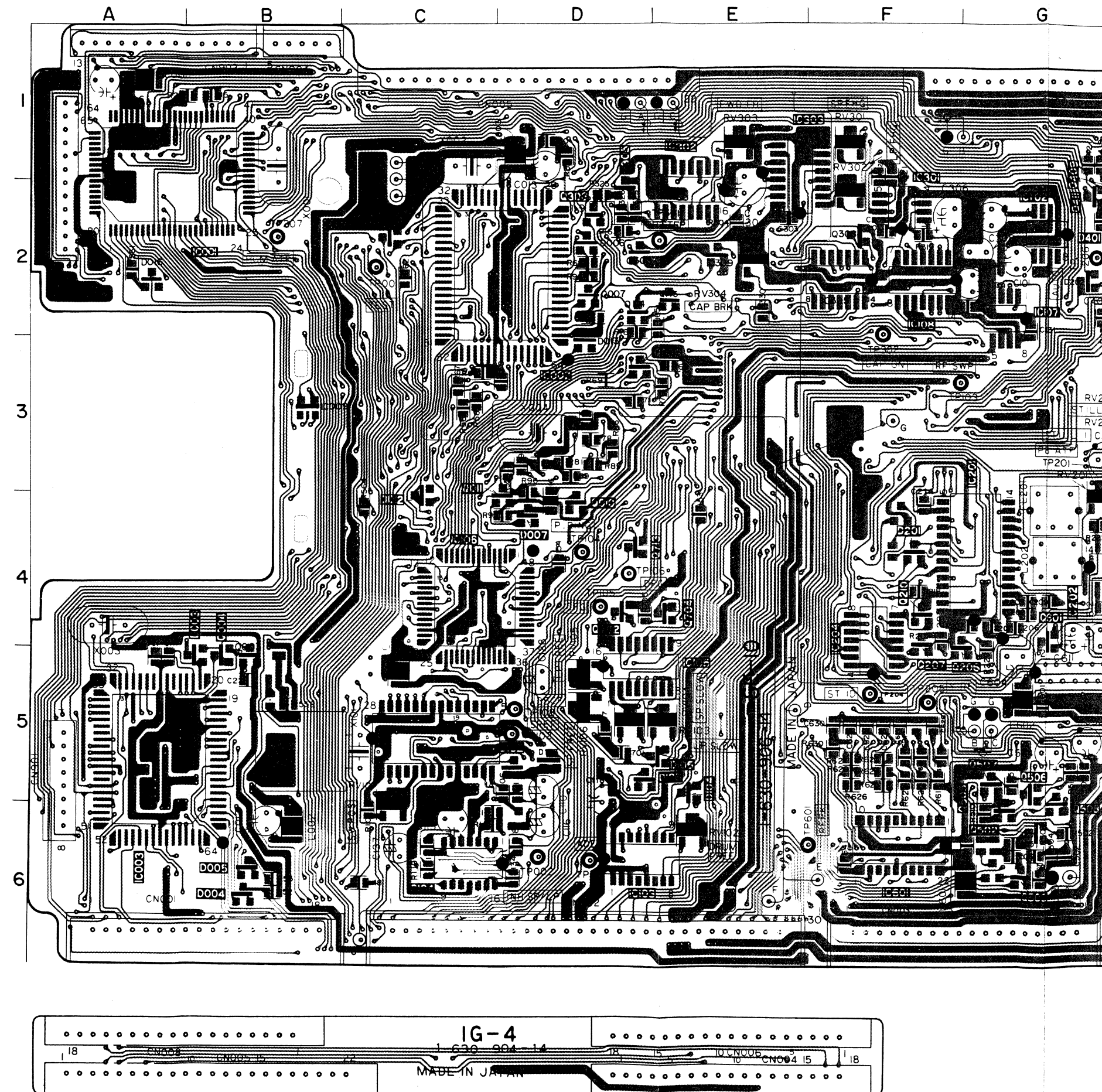
SE-10P; SERVO, SYSTEM CONTROL
IG-4; TERMINAL

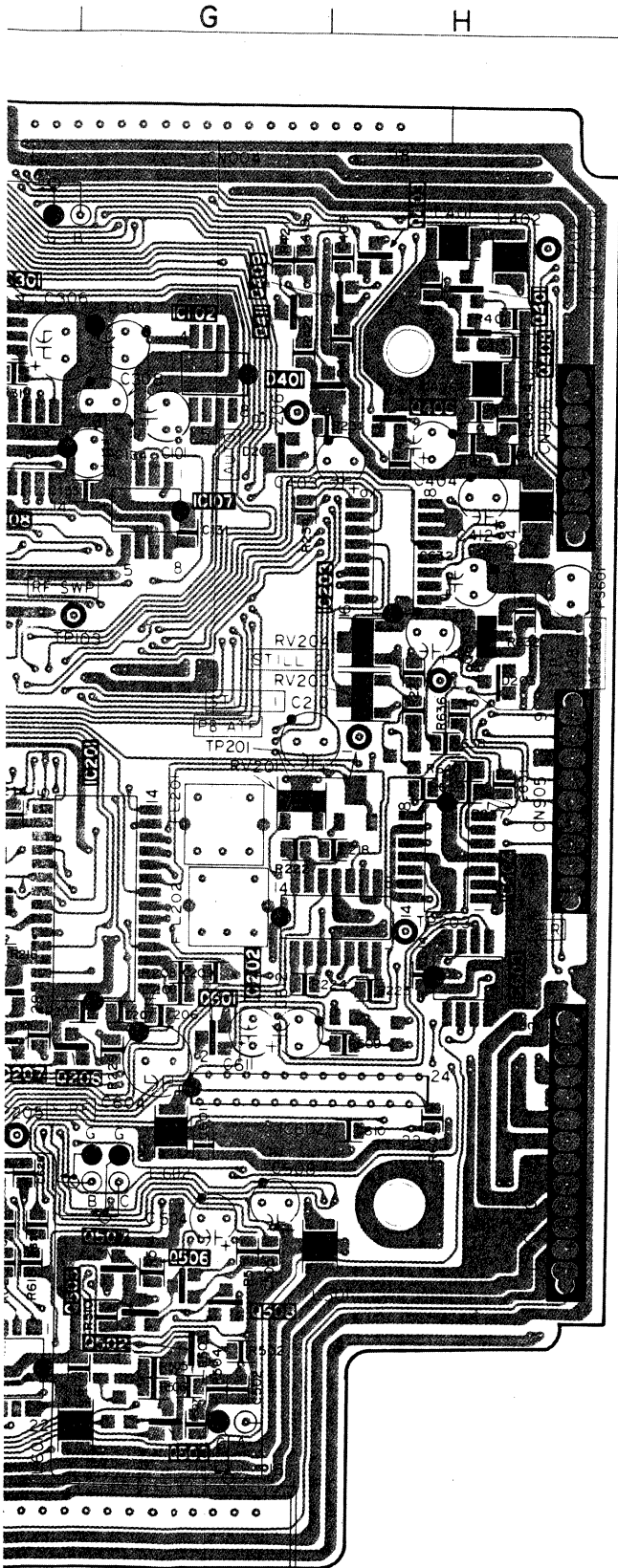
SE-10P(1-630-906-14)C

| | | | | | |
|-------|-----|-------|-----|-------|-----|
| CN001 | A-6 | Q003 | B-5 | TP108 | D-5 |
| CN002 | D-6 | Q004 | B-5 | TP201 | H-3 |
| CN003 | G-6 | Q007 | D-2 | TP202 | H-1 |
| CN004 | G-1 | Q009 | D-3 | TP203 | H-4 |
| CN005 | D-1 | Q010 | D-4 | TP204 | F-5 |
| CN901 | A-5 | Q011 | C-4 | TP205 | F-5 |
| CN902 | A-1 | Q018 | C-2 | TP206 | G-2 |
| CN903 | A-1 | Q114 | D-2 | TP207 | B-2 |
| CN904 | B-1 | Q203 | H-3 | TP208 | H-3 |
| CN905 | H-4 | Q204 | H-3 | TP301 | E-2 |
| CN906 | H-2 | Q206 | F-5 | TP302 | F-3 |
| CN907 | H-5 | Q207 | F-5 | TP601 | F-6 |
| | | Q210 | F-4 | | |
| D003 | B-5 | Q303 | D-2 | X001 | B-2 |
| D004 | B-6 | Q305 | D-2 | X002 | C-1 |
| D005 | B-6 | Q306 | D-2 | X003 | A-4 |
| D006 | D-2 | Q309 | E-2 | X004 | D-3 |
| D007 | D-4 | Q401 | H-2 | X101 | C-5 |
| D012 | C-4 | Q403 | H-1 | | |
| D013 | D-3 | Q406 | H-2 | | |
| D016 | A-2 | Q408 | H-2 | | |
| D101 | D-6 | Q409 | G-2 | | |
| D102 | D-5 | Q411 | G-2 | | |
| D104 | E-5 | Q502 | G-6 | | |
| D105 | E-5 | Q503 | G-6 | | |
| D106 | E-5 | Q505 | G-6 | | |
| D201 | F-4 | Q506 | G-5 | | |
| D202 | G-2 | Q507 | G-5 | | |
| D401 | G-2 | Q508 | G-6 | | |
| | | Q601 | G-4 | | |
| FL201 | G-4 | Q604 | H-3 | | |
| FL202 | G-4 | Q702 | D-4 | | |
| | | Q704 | E-4 | | |
| | | Q713 | D-4 | | |
| IC001 | B-2 | | | | |
| IC002 | D-2 | | | | |
| IC003 | A-5 | RV101 | C-6 | | |
| IC009 | B-3 | RV102 | E-6 | | |
| IC101 | C-5 | RV103 | E-5 | | |
| IC102 | G-2 | RV104 | D-5 | | |
| IC103 | D-6 | RV105 | D-5 | | |
| IC104 | C-6 | RV106 | D-5 | | |
| IC105 | D-5 | RV201 | G-4 | | |
| IC106 | C-4 | RV202 | H-4 | | |
| IC107 | G-2 | RV203 | H-3 | | |
| IC108 | F-2 | RV204 | H-3 | | |
| IC201 | G-4 | RV301 | F-1 | | |
| IC202 | G-4 | RV302 | F-2 | | |
| IC203 | H-3 | RV303 | E-1 | | |
| IC204 | F-5 | RV304 | E-2 | | |
| IC301 | F-2 | | | | |
| IC302 | E-2 | TP001 | C-2 | | |
| IC303 | E-1 | TP002 | D-6 | | |
| IC305 | F-2 | TP101 | D-6 | | |
| IC601 | F-6 | TP102 | D-5 | | |
| IC602 | G-5 | TP103 | F-3 | | |
| IC603 | H-4 | TP104 | D-4 | | |
| IC604 | H-4 | TP105 | D-4 | | |
| | | TP106 | D-4 | | |
| PS601 | H-3 | TP107 | C-5 | | |

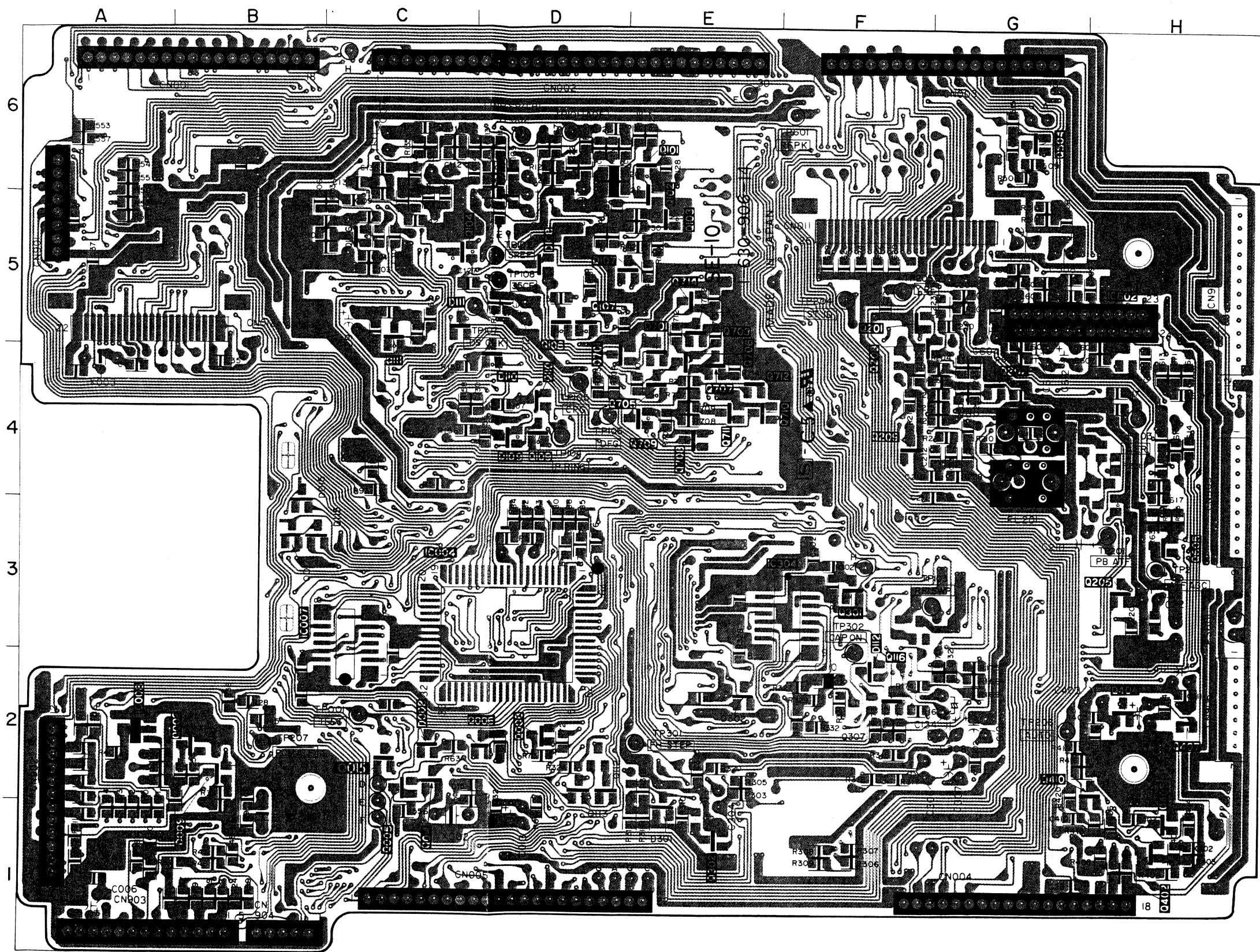
SE-10P(1-630-906-14)S

| | | | |
|-------|-----|------|-----|
| CN011 | F-5 | Q605 | H-3 |
| CN012 | B-5 | Q701 | D-4 |
| D008 | C-2 | Q703 | E-5 |
| D009 | B-2 | Q705 | E-4 |
| D010 | B-2 | Q706 | E-4 |
| D015 | B-4 | Q707 | E-4 |
| D107 | D-5 | Q708 | E-4 |
| D108 | D-5 | Q709 | E-4 |
| D109 | D-4 | Q710 | E-4 |
| D110 | D-4 | Q711 | E-4 |
| D111 | C-5 | Q712 | E-4 |
| D112 | F-2 | Q714 | E-5 |
| D115 | C-5 | | |
| D301 | E-1 | | |
| D302 | E-2 | | |
| D701 | E-5 | | |
| IC004 | D-3 | | |
| IC007 | C-3 | | |
| IC008 | A-2 | | |
| IC304 | F-3 | | |
| | | Q002 | B-2 |
| | | Q005 | C-2 |
| | | Q006 | D-2 |
| | | Q008 | D-2 |
| | | Q014 | C-2 |
| | | Q015 | C-2 |
| | | Q017 | B-5 |
| | | Q101 | E-6 |
| | | Q102 | E-6 |
| | | Q103 | E-5 |
| | | Q104 | C-5 |
| | | Q106 | C-5 |
| | | Q107 | D-5 |
| | | Q108 | D-5 |
| | | Q109 | D-4 |
| | | Q110 | D-4 |
| | | Q111 | C-5 |
| | | Q112 | D-2 |
| | | Q113 | D-2 |
| | | Q116 | F-2 |
| | | Q201 | F-5 |
| | | Q202 | G-4 |
| | | Q203 | H-3 |
| | | Q205 | H-3 |
| | | Q208 | F-5 |
| | | Q209 | F-4 |
| | | Q211 | H-4 |
| | | Q301 | F-3 |
| | | Q302 | E-1 |
| | | Q304 | D-2 |
| | | Q307 | F-2 |
| | | Q402 | H-1 |
| | | Q404 | H-2 |
| | | Q405 | H-1 |
| | | Q407 | H-2 |
| | | Q410 | H-2 |
| | | Q504 | G-6 |

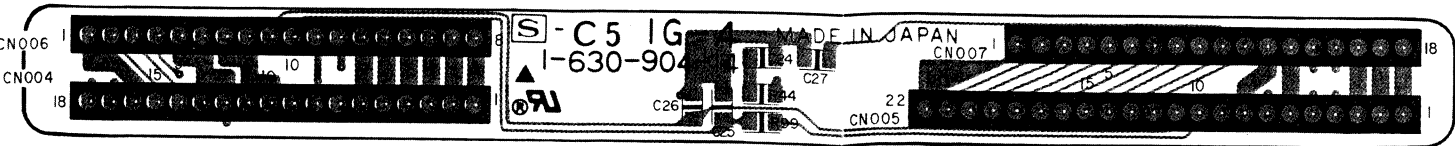




SE-10P —COMPONENT SIDE—
I-630-906-14(I)
EVO-9800P

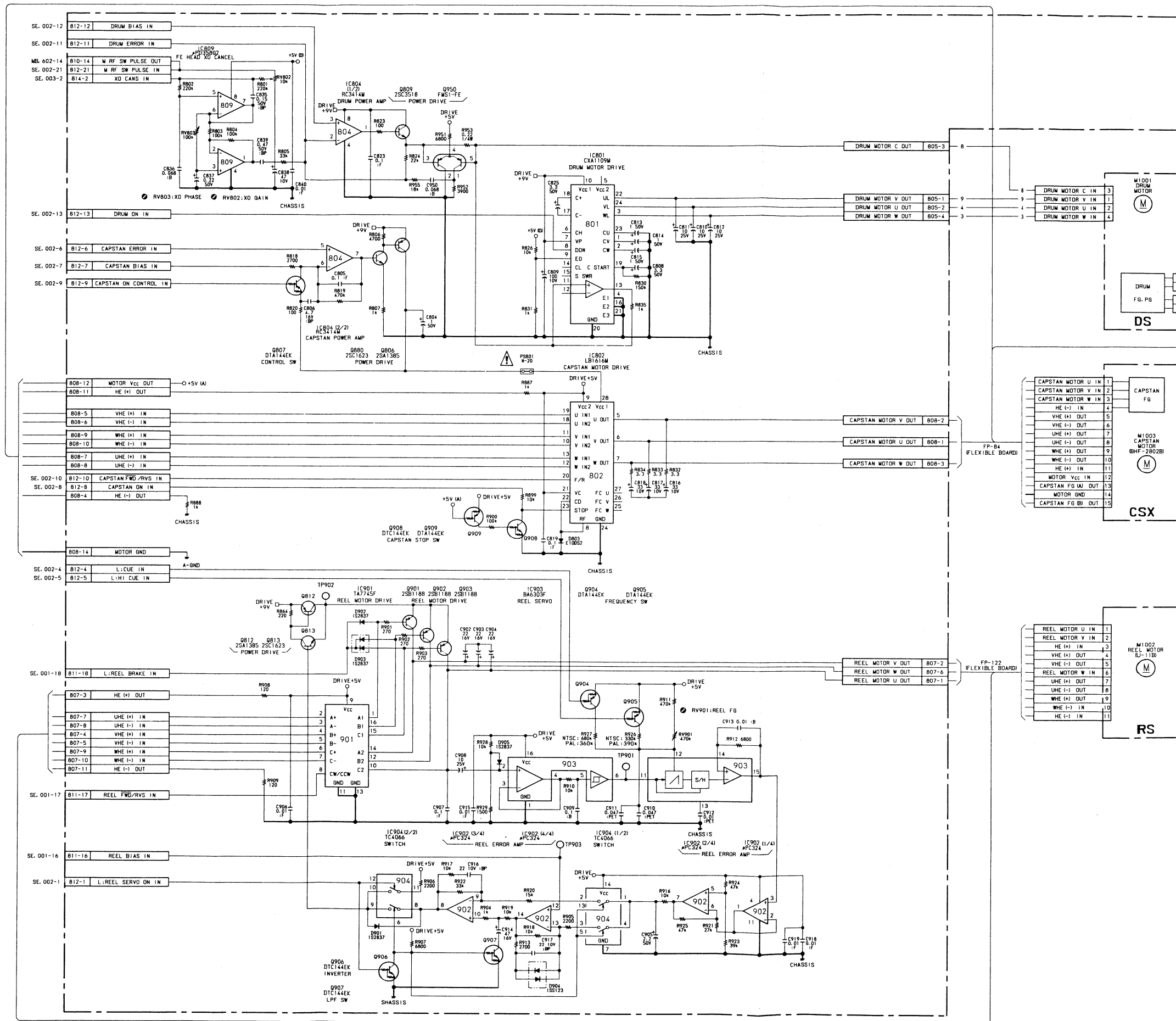


SE-10P —SOLDERING SIDE—
I-630-906-14(I)
EVO-9800P

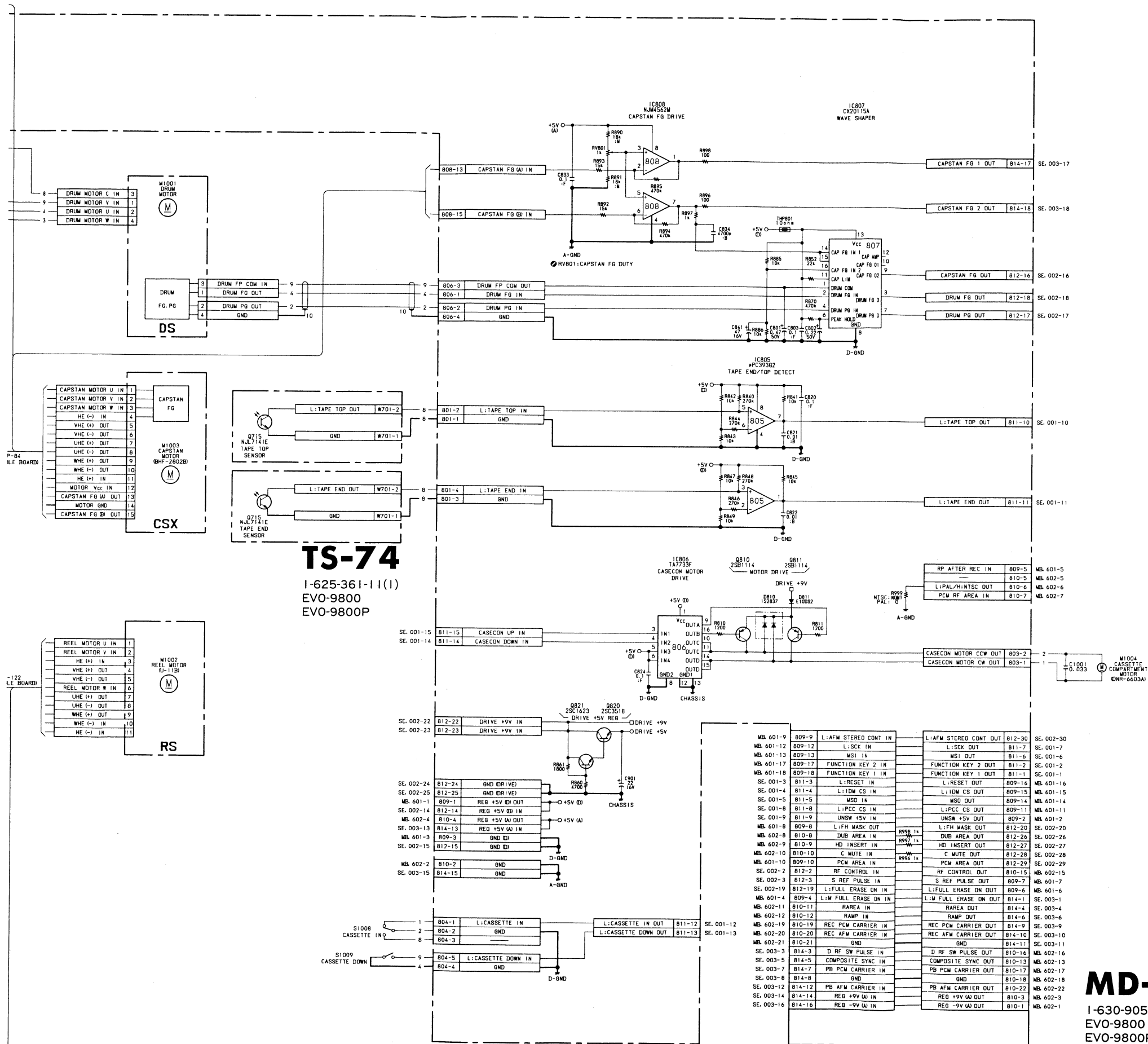


IG-4 —SOLDERING SIDE—
I-630-904-14 (I)
EVO-9800P

MD-23P; DRUM/CAPSTAN/REEL MOTOR DRIVE
TS-74; TAPE TOP/END SENSOR



NOTE:
The Δ -marked components are critical to safety.
Replace only with same components as specified.



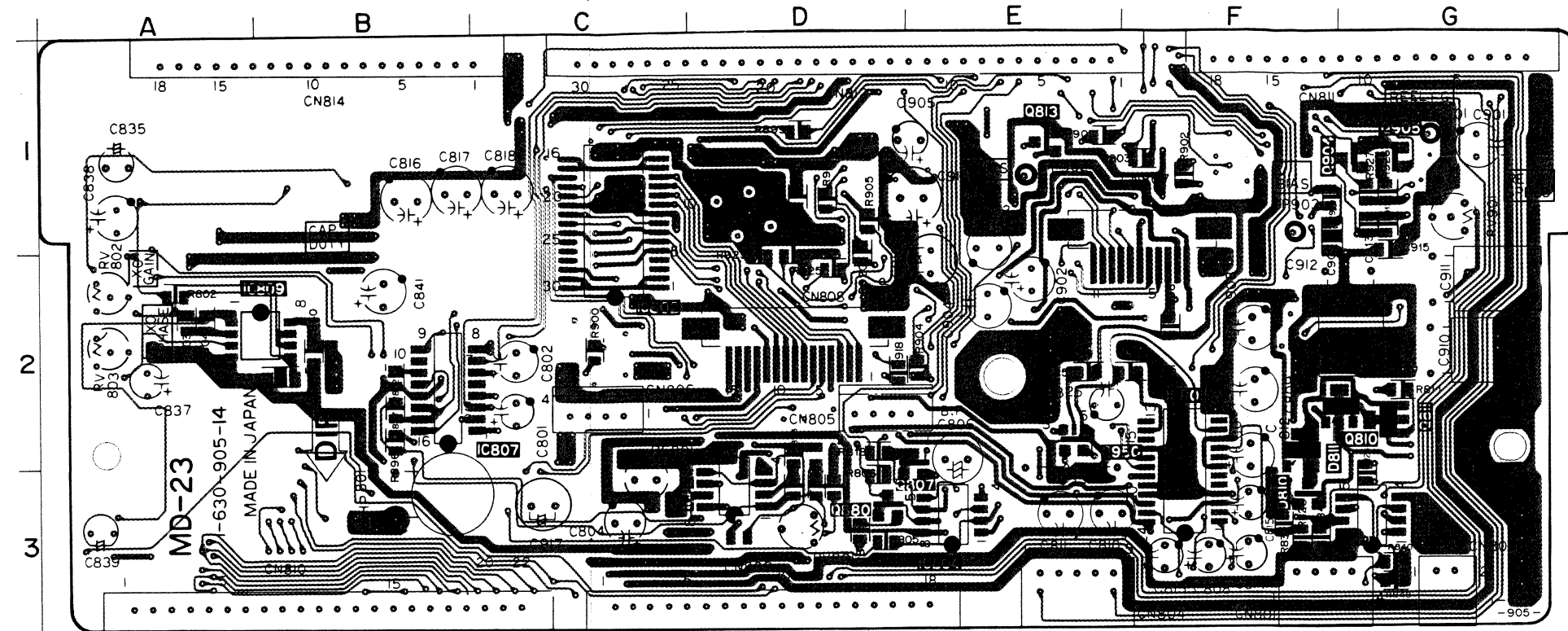
**MD-23P; DRUM/CAASTAN/REEL MOTOR DRIVE
TS-74; TAPE POP/END SENSOR**

MD-23P(1-630-905-14)C

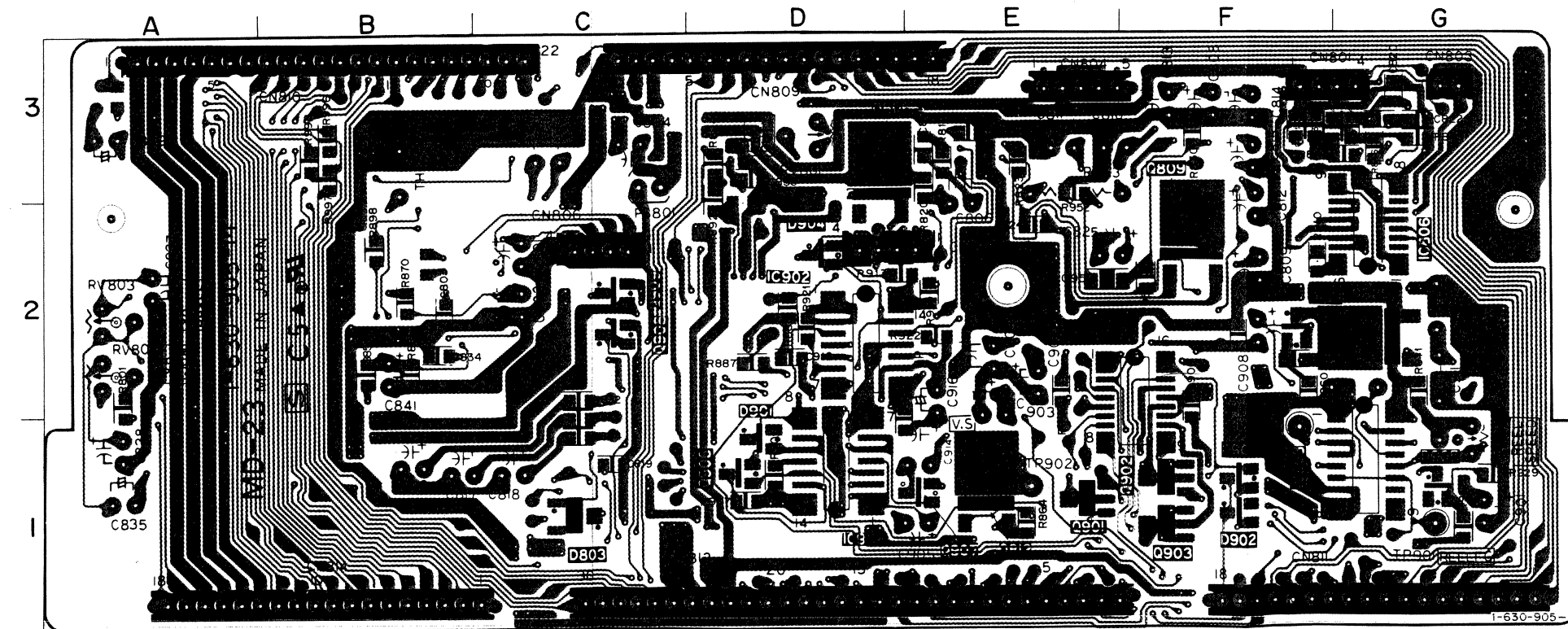
| | | | |
|-------|-----|--------|-----|
| CN801 | F-3 | PS801 | C-3 |
| CN803 | G-3 | | |
| CN804 | E-3 | Q807 | E-3 |
| CN805 | D-2 | Q810 | G-2 |
| CN806 | C-2 | Q811 | G-2 |
| CN807 | F-1 | Q813 | E-1 |
| CN808 | D-2 | Q880 | D-3 |
| CN809 | D-3 | Q904 | G-1 |
| CN810 | B-2 | Q905 | G-1 |
| CN811 | F-1 | Q950 | E-2 |
| CN812 | D-1 | | |
| CN814 | B-1 | RV801 | D-3 |
| | | RV802 | A-2 |
| D810 | F-3 | RV803 | A-2 |
| D811 | F-3 | RV901 | G-1 |
| IC801 | F-2 | THP801 | B-3 |
| IC802 | C-1 | | |
| IC804 | E-3 | TP901 | G-1 |
| IC805 | G-3 | TP902 | E-1 |
| IC807 | B-2 | TP903 | F-1 |
| IC808 | D-3 | | |
| IC809 | A-2 | | |

MD-23P(1-630-905-14)S

| | |
|-------|-----|
| D803 | C-1 |
| D901 | D-1 |
| D902 | F-1 |
| D903 | F-1 |
| D904 | D-2 |
| D905 | G-1 |
| IC806 | G-2 |
| IC901 | F-2 |
| IC902 | D-2 |
| IC903 | G-1 |
| IC904 | D-1 |
| Q806 | D-3 |
| Q809 | F-2 |
| Q812 | E-1 |
| Q820 | G-2 |
| Q821 | F-2 |
| Q901 | E-1 |
| Q902 | F-1 |
| Q903 | F-1 |
| Q906 | D-1 |
| Q907 | E-1 |
| Q908 | C-2 |
| Q909 | C-2 |



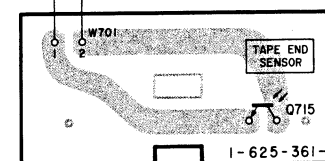
MD-23P —COMPONENT SIDE—
1-630-905-14(1)
EVO-9800P



MD-23P —SOLDERING SIDE—
1-630-905-14(1)
EVO-9800P

TO
MD-23 BOARD
CN801

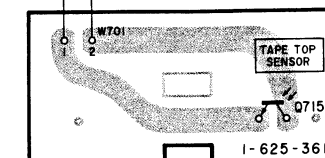
TAPE TOP
REG GND



TS-74 —SOLDERING SIDE—
I-625-361-1
EVO-9800
EVO-9800P

TO
MD-23 BOARD
CN801

TAPE END
REG GND



TS-74 —SOLDERING SIDE—
I-625-361-1
EVO-9800
EVO-9800P



RS-31; MECHANISM CONTROL

LD-1; TAPE SENSOR

RS-31(1-630-907-11)C

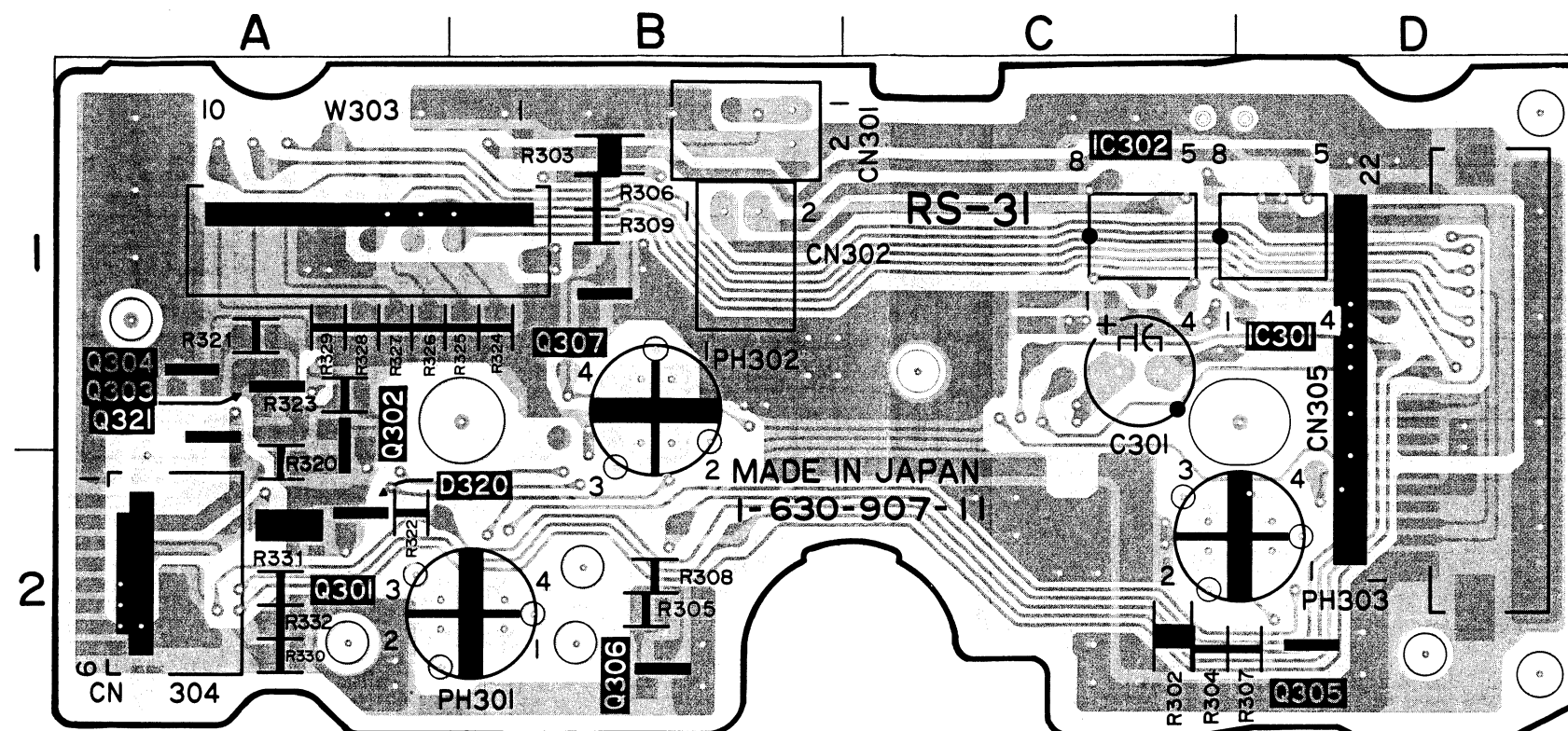
CN301 B-1
CN302 B-1
CN304 A-2
CN305 D-1

D320 A-2
D321 A-1

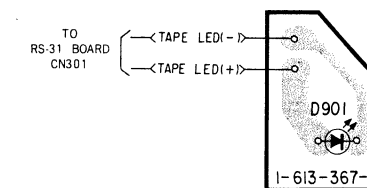
IC301 D-1
IC302 C-1

PH301 B-2
PH302 B-1
PH303 C-2

Q301 A-2
Q302 A-1
Q303 A-1
Q304 A-1
Q305 D-2
Q306 B-2
Q307 B-1

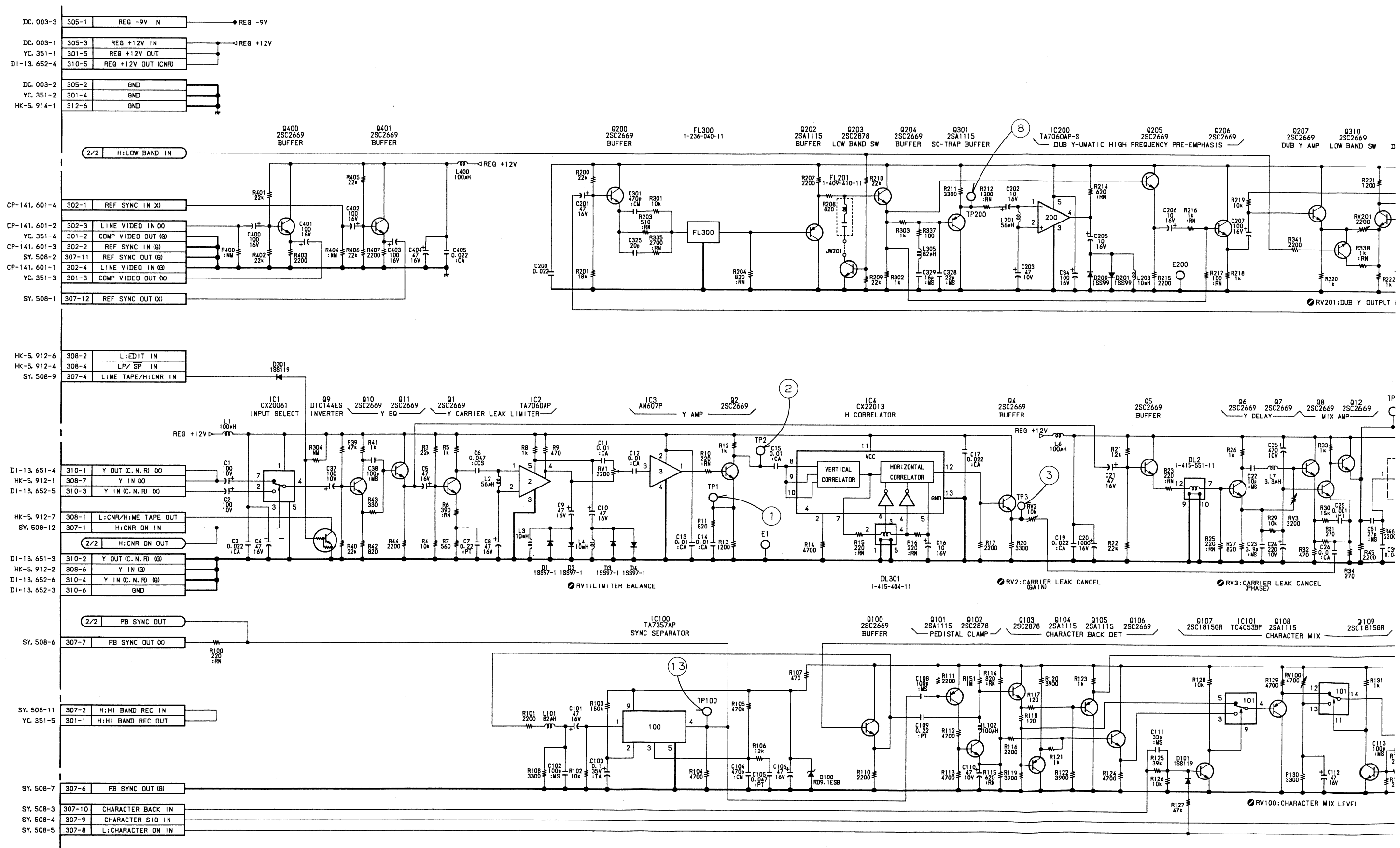


RS-31 —COMPONENT SIDE—
1-630-907-11(I)
EVO-9800
EVO-9800P

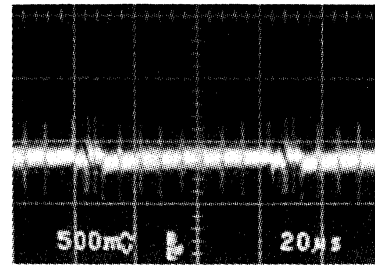


LD-1 —SOLDERING SIDE—
1-613-367-11
EVO-9800
EVO-9800P

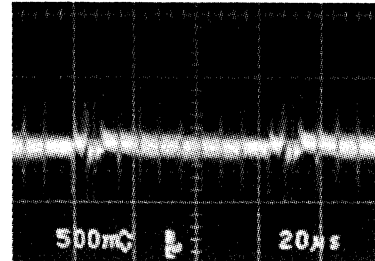
VO-30 (1/2); Y INTERFACE



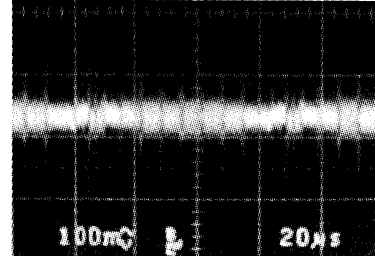
① TP1 EE mode



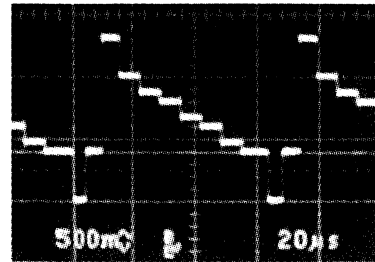
② TP2 EE mode



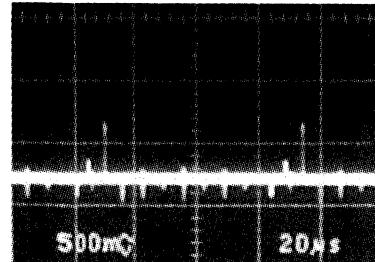
③ TP3 EE mode



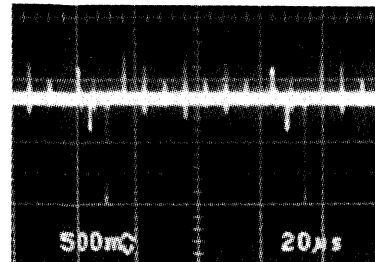
④ TP4 EE mode



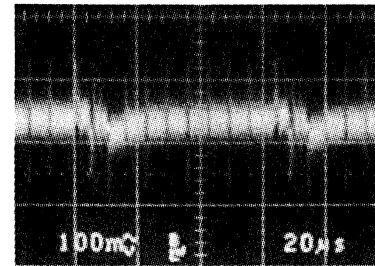
⑤ TP51 EE mode



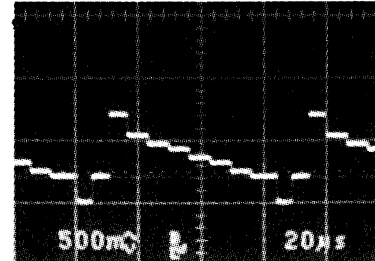
⑥ TP52 EE mode



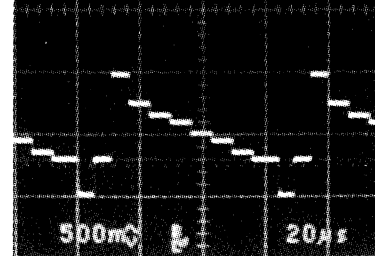
⑦ TP53 EE mode



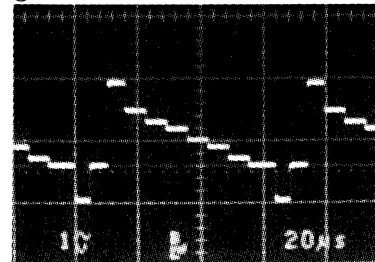
⑧ TP200 EE mode



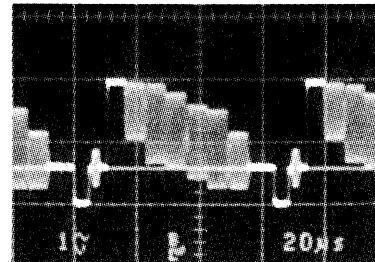
⑨ TP202 EE mode



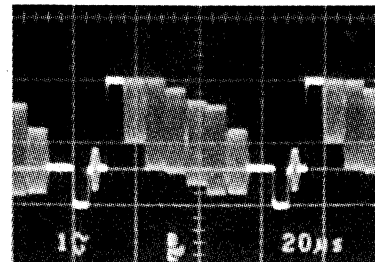
⑩ TP301 EE mode



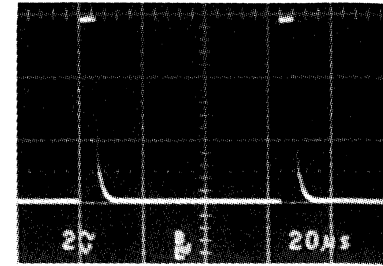
⑪ TP5 EE mode



⑫ TP101 EE mode



⑬ TP100 EE mode



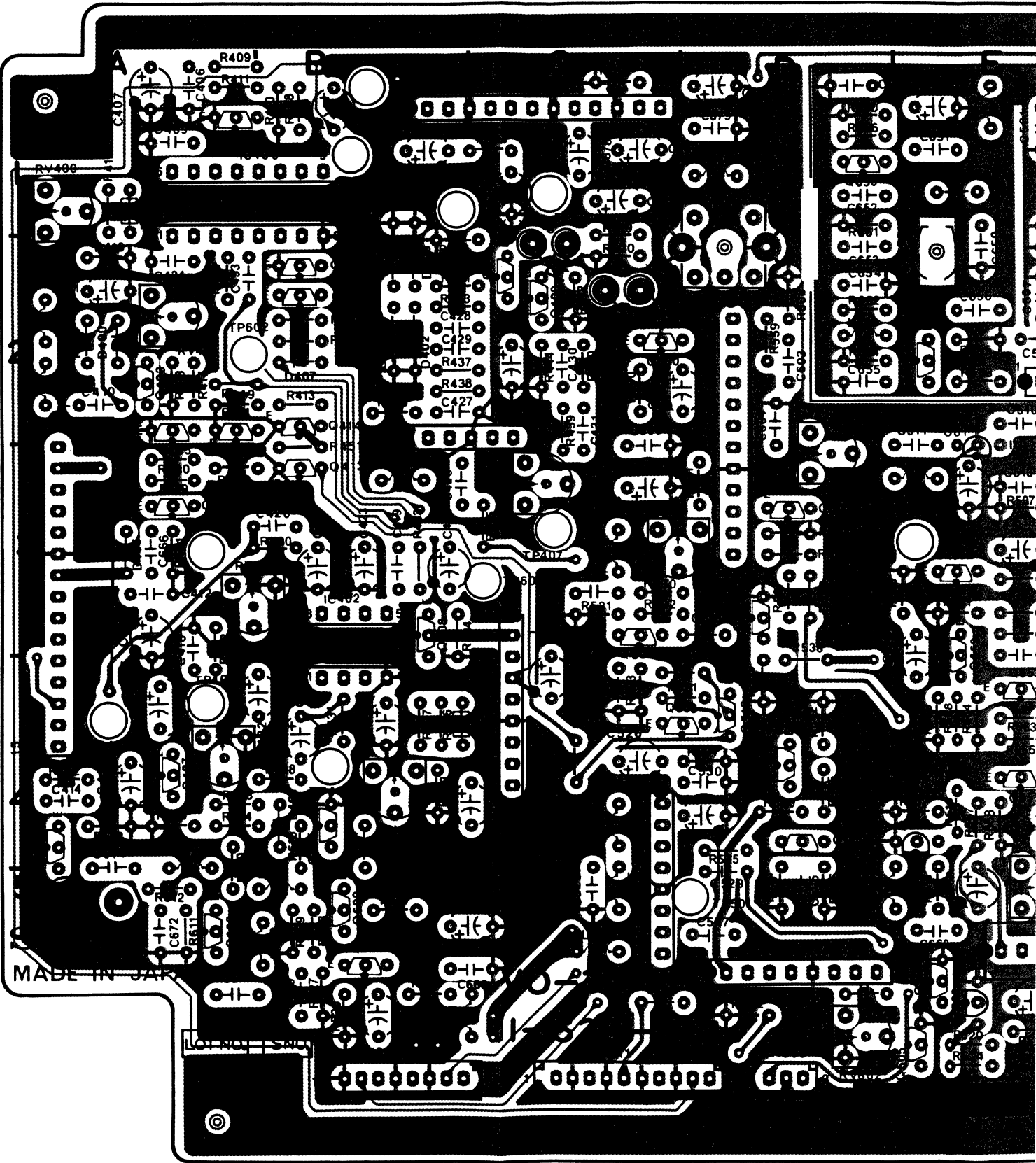
Measurement Condition

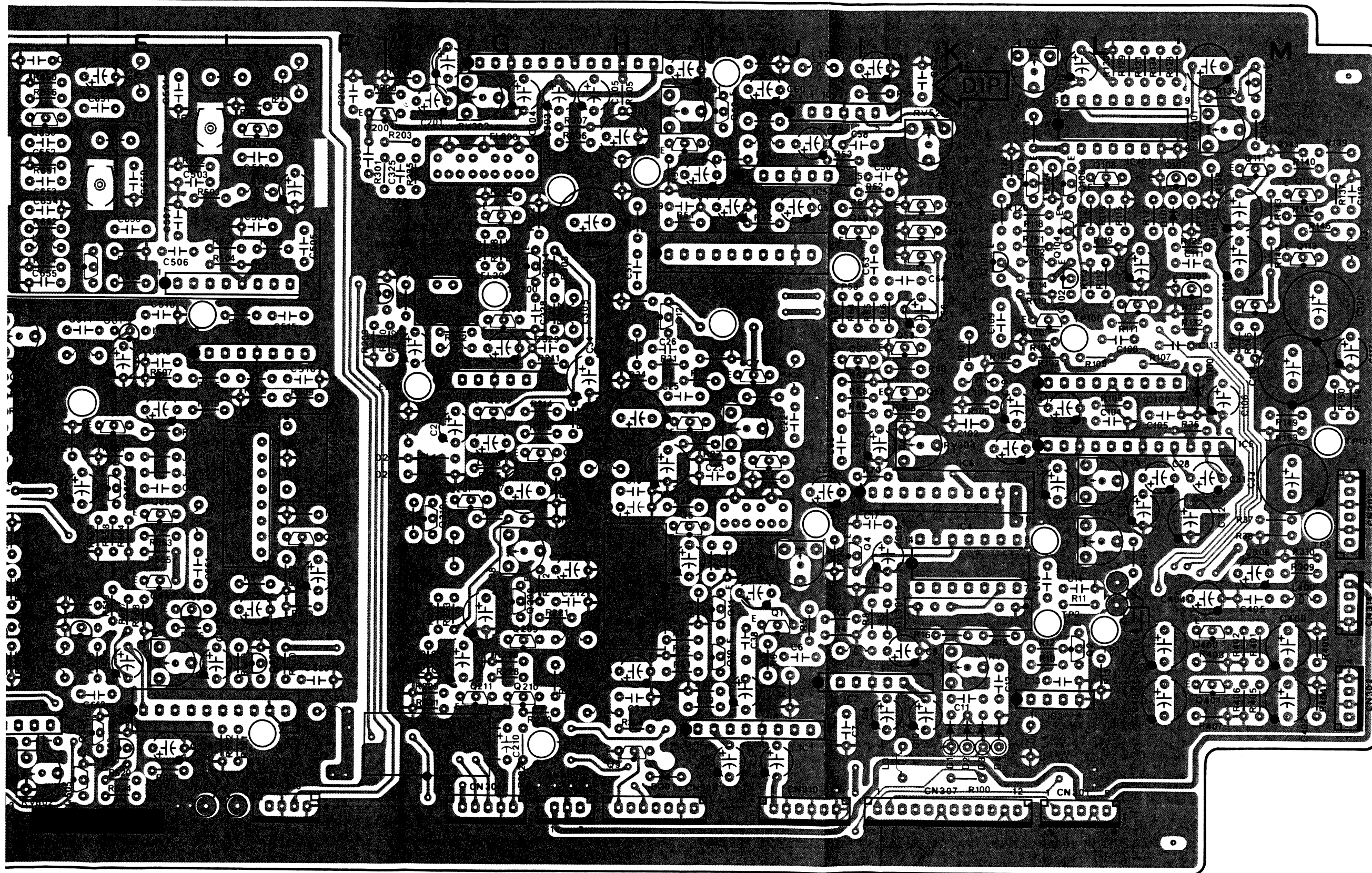
- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE (Color Bars Signal)

VO-30; Y/C INTERFACE

VO-30(1-635-081-11,12) A SIDE

| | | | | | | | |
|-------|-----|-------|-----|-------|-----|-------|-----|
| CN301 | L-5 | IC402 | B-3 | Q210 | G-5 | RV400 | A-1 |
| CN302 | M-5 | IC403 | C-2 | Q211 | G-5 | RV401 | B-3 |
| CN303 | M-4 | IC500 | F-2 | Q301 | G-2 | RV402 | B-4 |
| CN304 | G-5 | IC501 | E-2 | Q310 | G-4 | RV403 | B-4 |
| CN305 | H-5 | IC502 | F-3 | Q400 | M-4 | RV404 | C-3 |
| CN306 | D-5 | IC503 | F-5 | Q401 | M-5 | RV501 | E-4 |
| CN307 | K-5 | IC505 | C-5 | Q402 | A-1 | RV600 | C-3 |
| CN308 | H-5 | IC600 | D-2 | Q403 | A-2 | RV601 | D-2 |
| CN310 | J-5 | IC601 | C-4 | Q404 | A-3 | RV602 | D-5 |
| CN311 | C-5 | IC602 | C-1 | Q405 | A-3 | | |
| CN312 | B-5 | IC603 | D-5 | Q406 | A-3 | TH400 | A-1 |
| CN313 | F-5 | | | Q407 | A-4 | TH401 | C-4 |
| | | LV600 | D-1 | Q408 | B-3 | | |
| CV500 | E-1 | | | Q409 | C-2 | X500 | E-1 |
| CV650 | E-2 | Q1 | J-4 | Q410 | C-2 | X650 | E-1 |
| | | Q2 | L-4 | Q411 | B-2 | | |
| D1 | K-5 | Q4 | K-4 | Q412 | B-2 | | |
| D2 | K-5 | Q5 | H-4 | Q413 | B-3 | | |
| D3 | K-5 | Q6 | J-3 | Q414 | B-2 | | |
| D4 | K-5 | Q7 | J-3 | Q500 | F-1 | | |
| D100 | M-3 | Q8 | H-3 | Q501 | F-4 | | |
| D101 | L-2 | Q9 | H-5 | Q502 | E-3 | | |
| D200 | G-3 | Q10 | J-5 | Q503 | E-5 | | |
| D201 | G-3 | Q11 | J-4 | Q504 | E-5 | | |
| D301 | H-5 | Q12 | H-2 | Q505 | E-5 | | |
| D400 | A-2 | Q51 | J-1 | Q506 | B-5 | | |
| D401 | B-4 | Q52 | J-1 | Q507 | C-3 | | |
| D402 | B-2 | Q53 | K-2 | Q508 | C-4 | | |
| D403 | B-2 | Q54 | K-2 | Q509 | D-3 | | |
| D404 | B-2 | Q55 | K-2 | Q510 | D-4 | | |
| D405 | B-2 | Q56 | K-2 | Q511 | D-4 | | |
| D406 | A-3 | Q57 | J-3 | Q512 | D-4 | | |
| D407 | B-2 | Q58 | K-3 | Q600 | C-2 | | |
| D500 | D-3 | Q59 | J-2 | Q601 | D-3 | | |
| | | Q100 | L-2 | Q602 | B-5 | | |
| DL2 | J-4 | Q101 | L-2 | Q603 | A-5 | | |
| DL301 | K-4 | Q102 | L-2 | Q604 | A-4 | | |
| DL500 | F-3 | Q103 | K-2 | Q605 | B-4 | | |
| | | Q104 | L-2 | Q650 | D-1 | | |
| FL201 | G-2 | Q105 | L-1 | Q651 | E-2 | | |
| FL300 | G-1 | Q106 | L-1 | Q652 | E-3 | | |
| FL500 | F-3 | Q107 | L-1 | Q653 | E-4 | | |
| | | Q108 | L-1 | Q654 | E-4 | | |
| IC1 | J-5 | Q109 | M-2 | Q655 | E-4 | | |
| IC2 | J-5 | Q110 | M-1 | Q656 | E-4 | | |
| IC3 | L-5 | Q111 | M-1 | Q657 | F-5 | | |
| IC4 | K-4 | Q112 | M-2 | | | | |
| IC5 | M-3 | Q113 | M-2 | RV1 | K-5 | | |
| IC6 | K-3 | Q114 | M-2 | RV2 | J-4 | | |
| IC51 | J-2 | Q200 | F-1 | RV3 | J-3 | | |
| IC52 | J-2 | Q202 | G-2 | RV4 | L-3 | | |
| IC53 | J-1 | Q203 | F-2 | RV5 | L-4 | | |
| IC100 | L-3 | Q204 | H-2 | RV51 | J-1 | | |
| IC101 | L-1 | Q205 | G-3 | RV52 | K-1 | | |
| IC200 | G-3 | Q206 | H-3 | RV100 | L-1 | | |
| IC301 | H-1 | Q207 | G-3 | RV101 | M-1 | | |
| IC400 | B-1 | Q208 | G-4 | RV201 | H-4 | | |
| IC401 | A-3 | Q209 | G-4 | RV302 | G-1 | | |





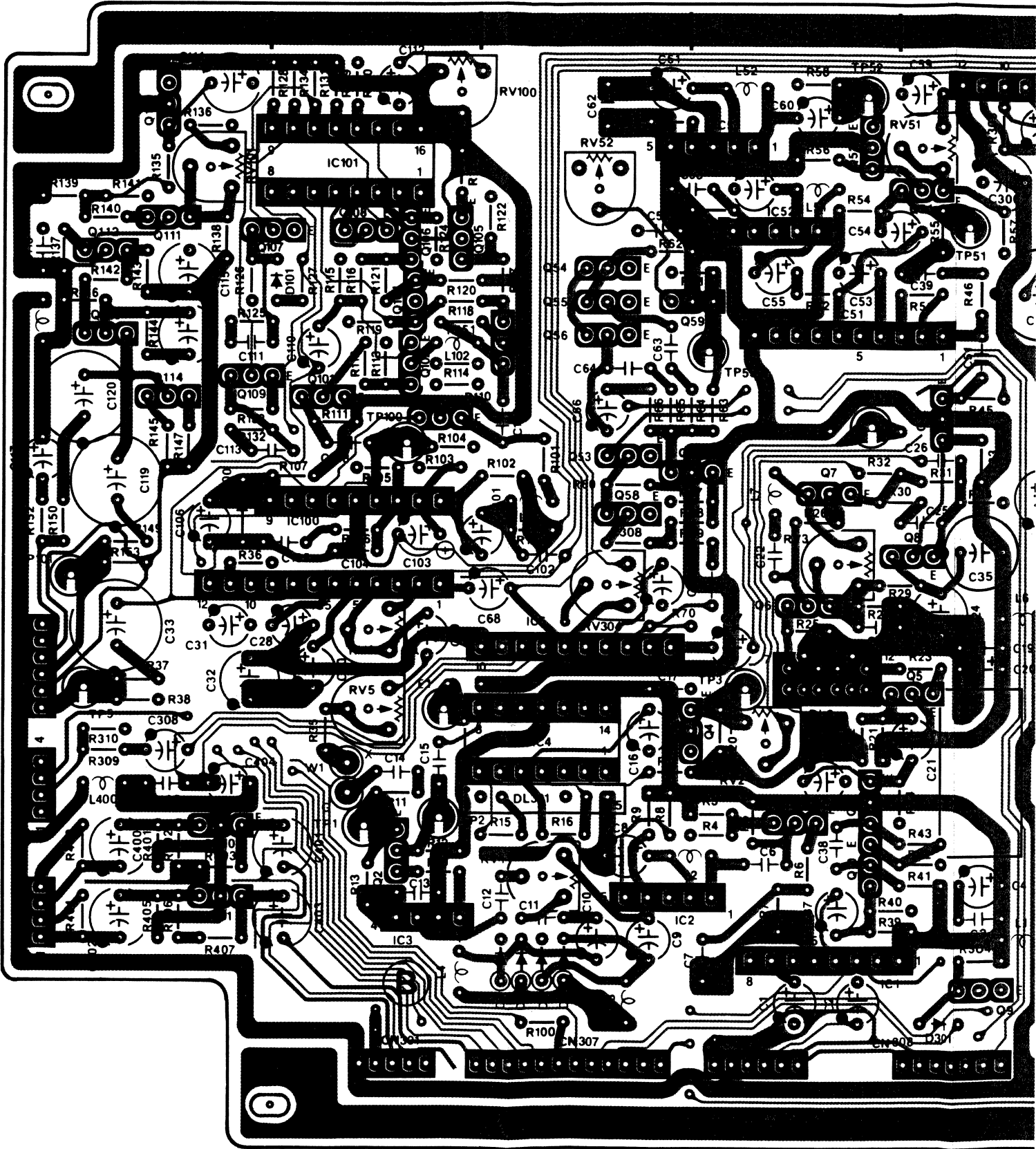
VO-30 - A SIDE -
1-635-081-11, 12(I)
EVO-9800P

A Side is the same as COMPONENT Side

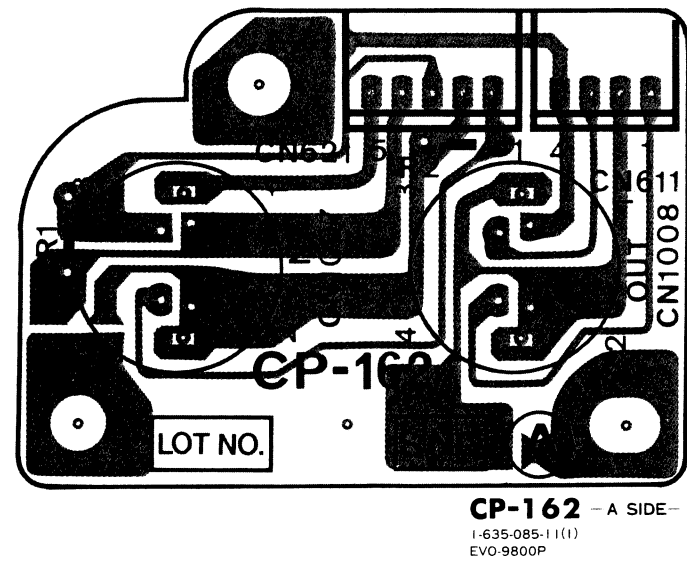
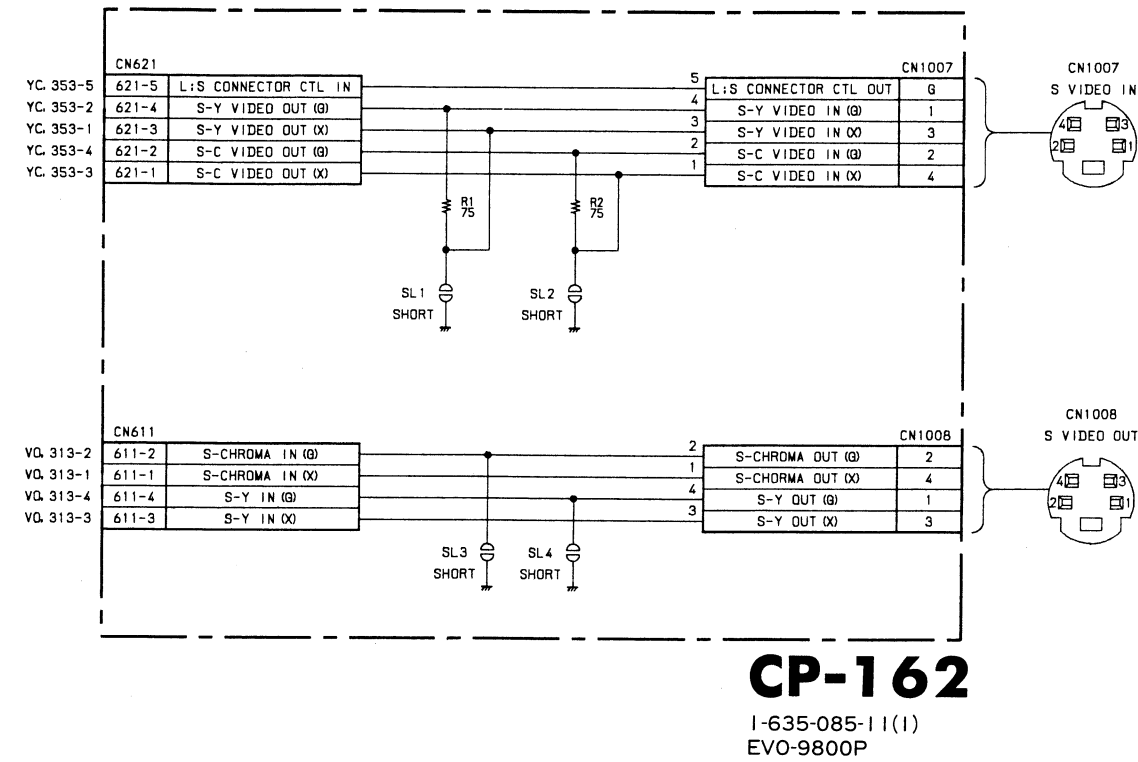
VO-30; Y/C INTERFACE

VO-30(1-635-081-11, 12) B SIDE

| | |
|-------|-----|
| E1 | L-4 |
| E200 | G-3 |
| E401 | B-1 |
| E501 | E-3 |
| TP1 | L-4 |
| TP2 | L-4 |
| TP3 | J-4 |
| TP4 | J-2 |
| TP5 | M-4 |
| TP51 | H-2 |
| TP52 | J-1 |
| TP53 | J-2 |
| TP100 | L-2 |
| TP101 | M-3 |
| TP200 | G-2 |
| TP202 | H-5 |
| TP301 | H-2 |
| TP402 | B-1 |
| TP403 | A-3 |
| TP404 | A-4 |
| TP405 | B-4 |
| TP406 | C-3 |
| TP407 | C-3 |
| TP408 | B-1 |
| TP409 | A-4 |
| TP501 | D-5 |
| TP502 | E-3 |
| TP503 | F-5 |
| TP601 | C-1 |
| TP602 | A-2 |



CP-162; S VIDEO CONNECTOR PANEL

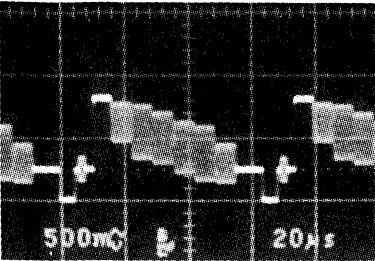


A Side is the same as COMPONENT Side

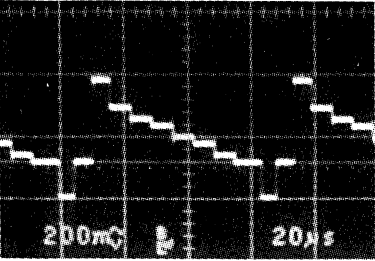
YC-46; Y/C SEPARATOR

YC-46

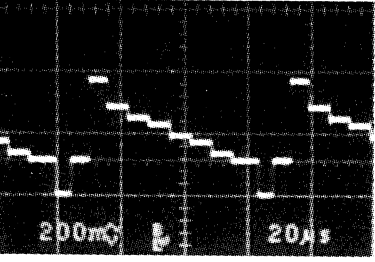
① TP100 EE mode



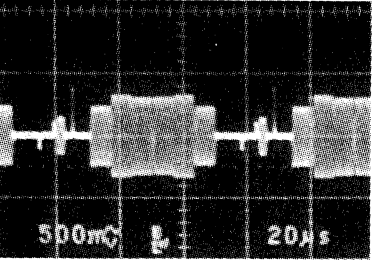
② TP102 EE mode



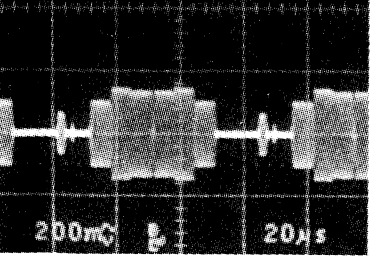
③ TP103 EE mode



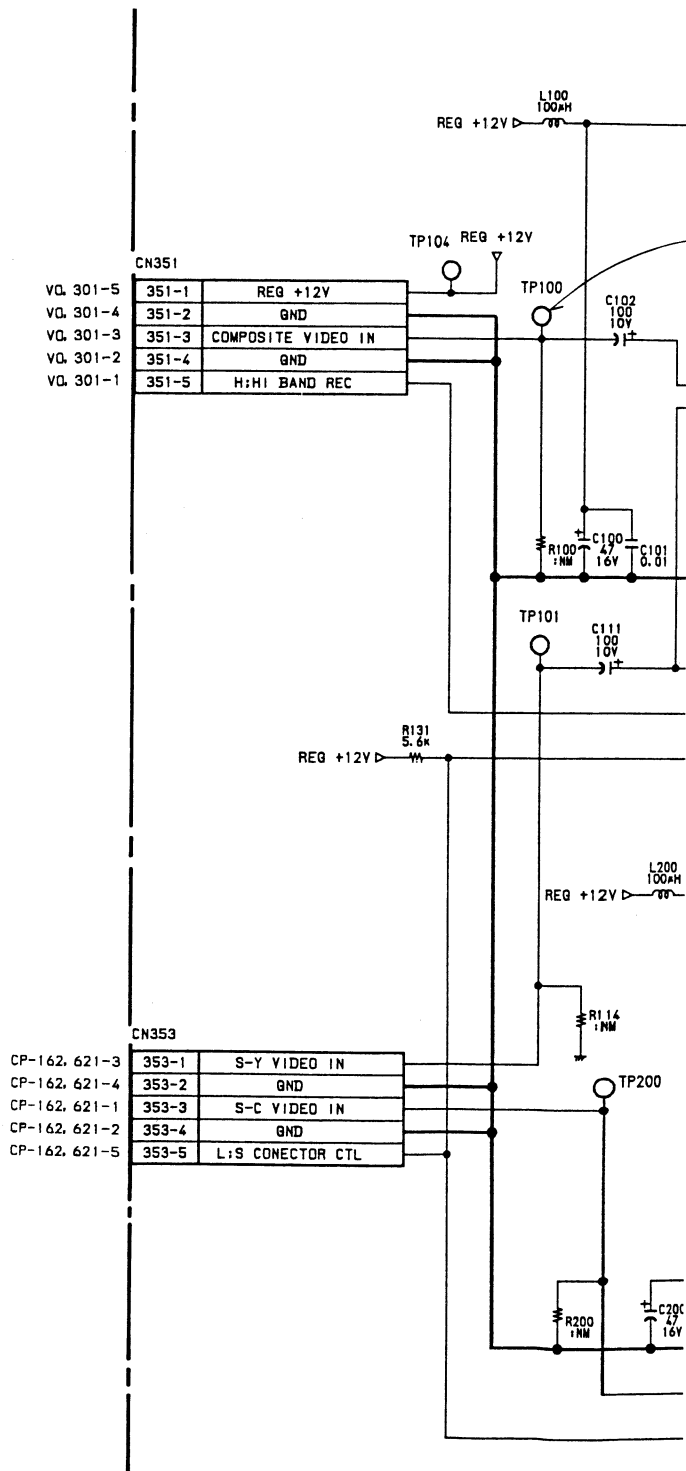
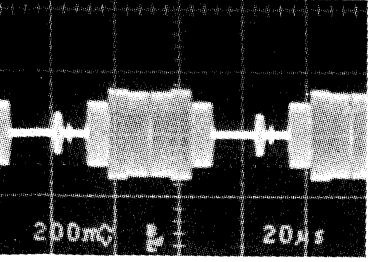
④ TP201 EE mode



⑤ TP202 EE mode

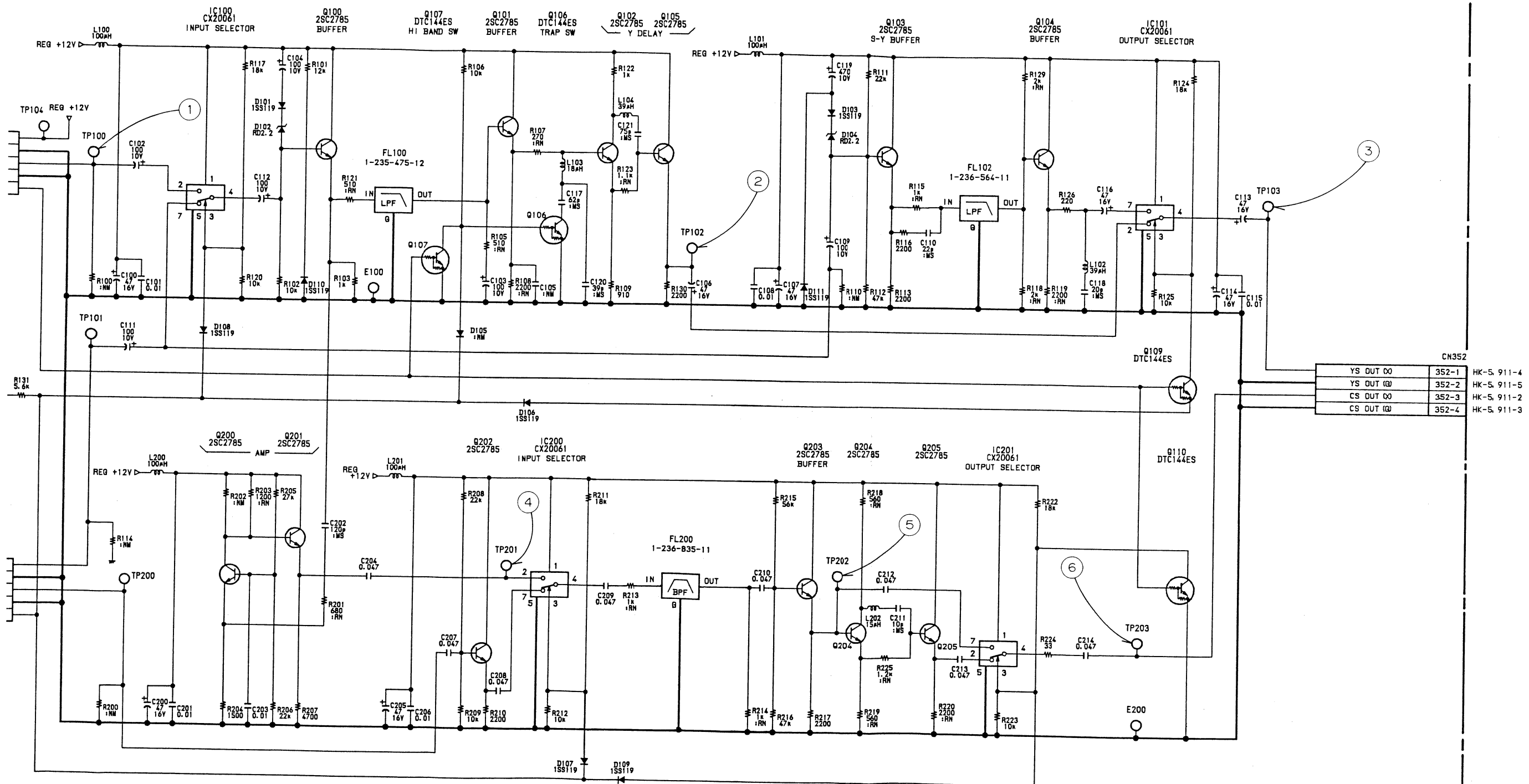


⑥ TP203 EE mode



Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE (Color Bars Signal)

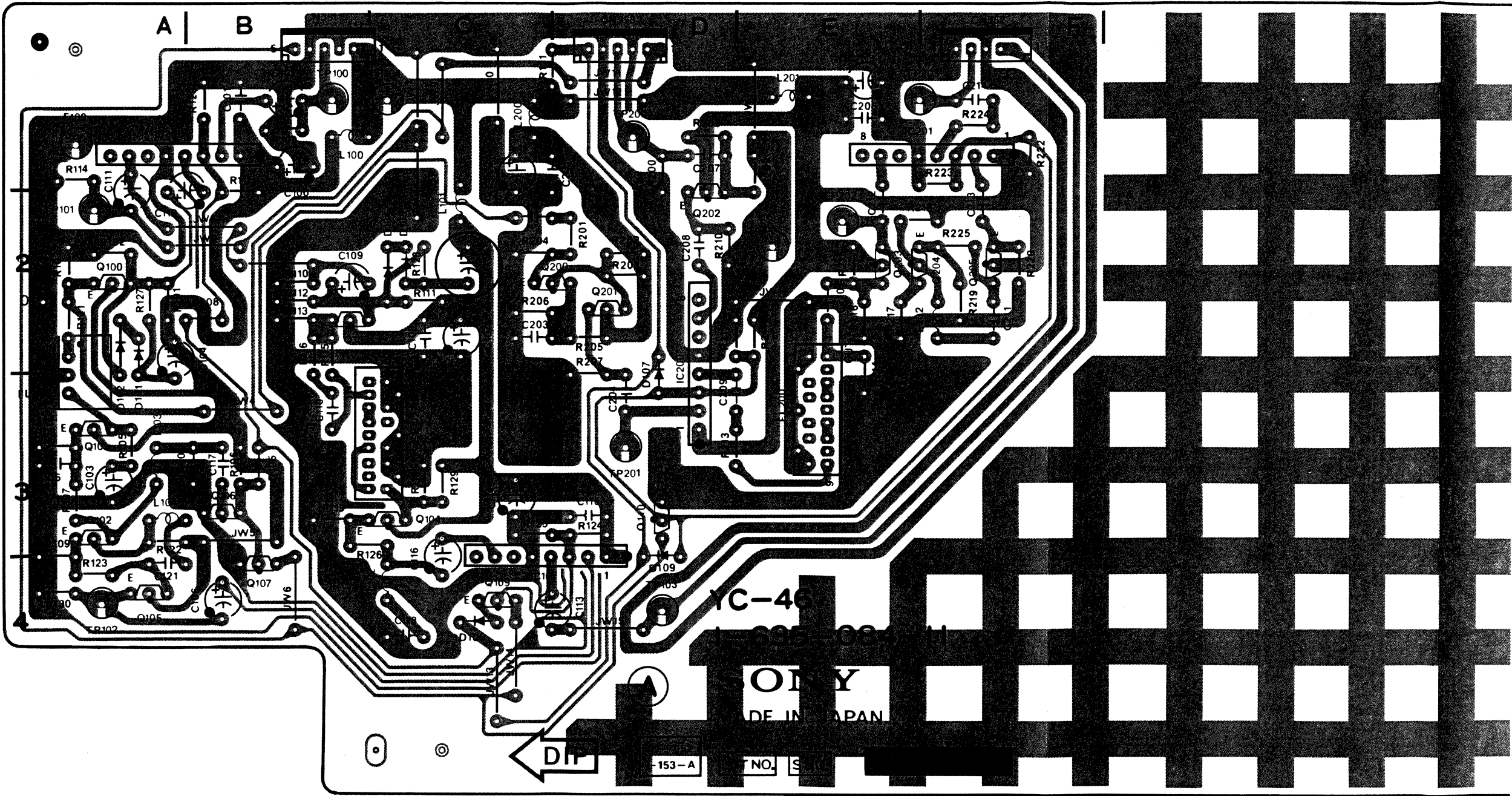
**YC-46**I-635-084-1 (1)
EVO-9800P

YC-46; Y/C SEPARATOR

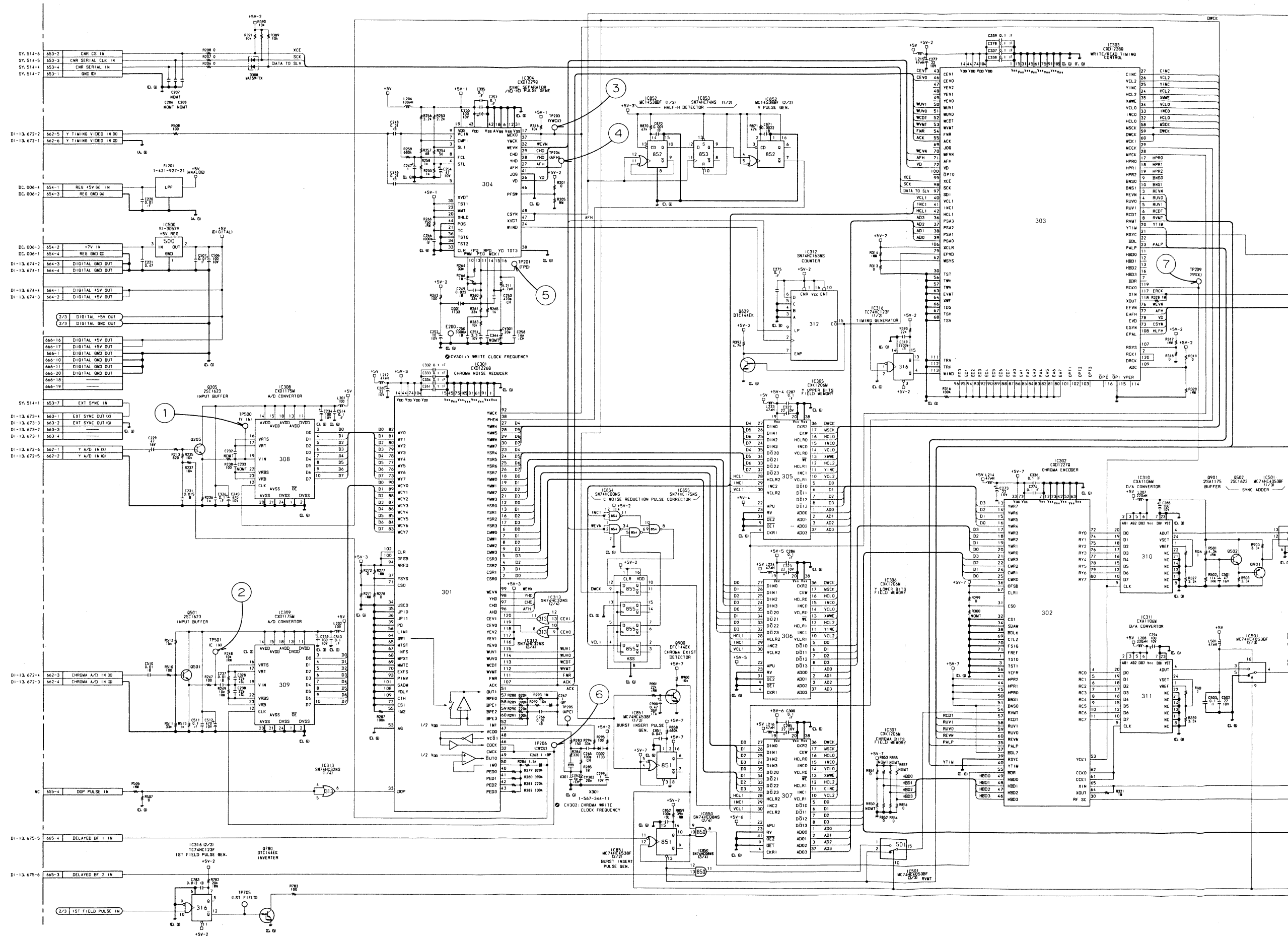
YC-46(1-635-084-11) A SIDE

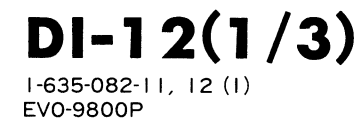
- | | |
|-------|------|
| CN351 | B-1 |
| CN532 | F-1 |
| CN533 | D-1 |
| | |
| D101 | A-3 |
| D102 | A-3 |
| D103 | C-2 |
| D104 | C-2 |
| D106 | C-4 |
| D107 | D-3 |
| D108 | B-2 |
| D109 | D-4 |
| | |
| E100 | A-1S |
| E200 | E-2S |
| | |
| FL100 | A-3 |
| FL102 | C-3 |
| FL200 | E-3 |
| | |
| IC100 | A-1 |
| IC101 | C-4 |
| IC200 | D-2 |
| IC201 | E-1 |
| | |
| Q100 | A-2 |
| Q101 | A-3 |
| Q102 | A-3 |
| Q103 | B-2 |
| Q104 | C-3 |
| Q105 | A-4 |
| Q106 | B-3 |
| Q107 | B-4 |
| Q109 | C-4 |
| Q110 | D-3 |
| Q200 | D-2 |
| Q201 | D-2 |
| Q202 | D-2 |
| Q203 | E-2 |
| Q204 | F-2 |
| Q205 | F-2 |
| | |
| TP100 | B-1S |
| TP101 | A-2S |
| TP102 | A-4S |
| TP103 | D-4S |
| TP104 | C-1S |
| TP200 | D-1S |
| TP201 | D-3S |
| TP202 | E-2S |
| TP203 | E-1S |

S: B SIDE (SOLDERING SIDE)

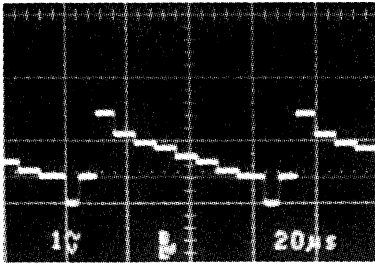


DI-12 (1/3); DIGITAL CHROMA NOISE REDUCER

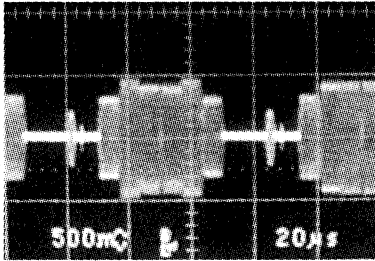




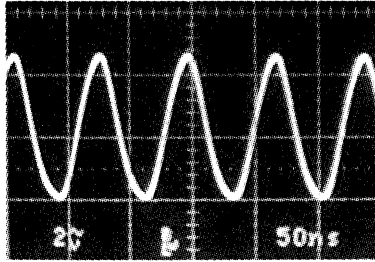
① TP500 EE mode



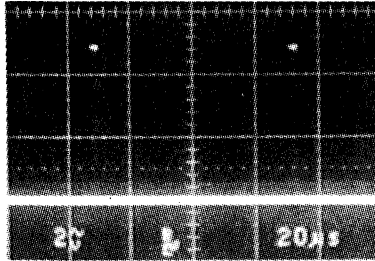
② TP501 EE mode



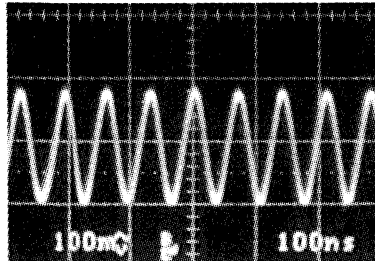
③ TP203 EE mode 14.21MHz



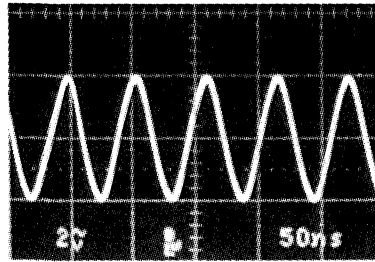
④ TP204 EE mode



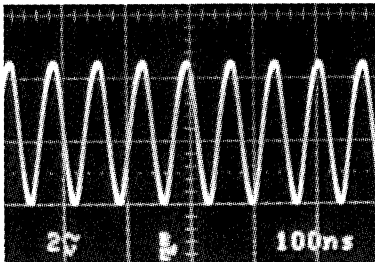
⑤ TP201 EE mode 14.21MHz



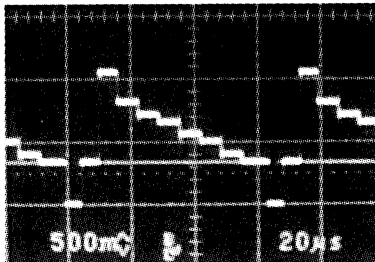
⑥ TP206 EE mode 17.73MHz



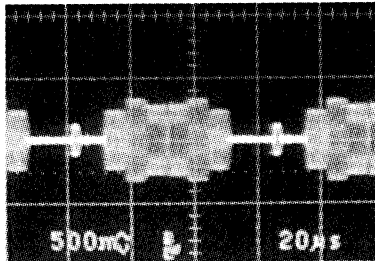
⑦ TP209 EE mode 14.21MHz



⑧ TP502 EE mode

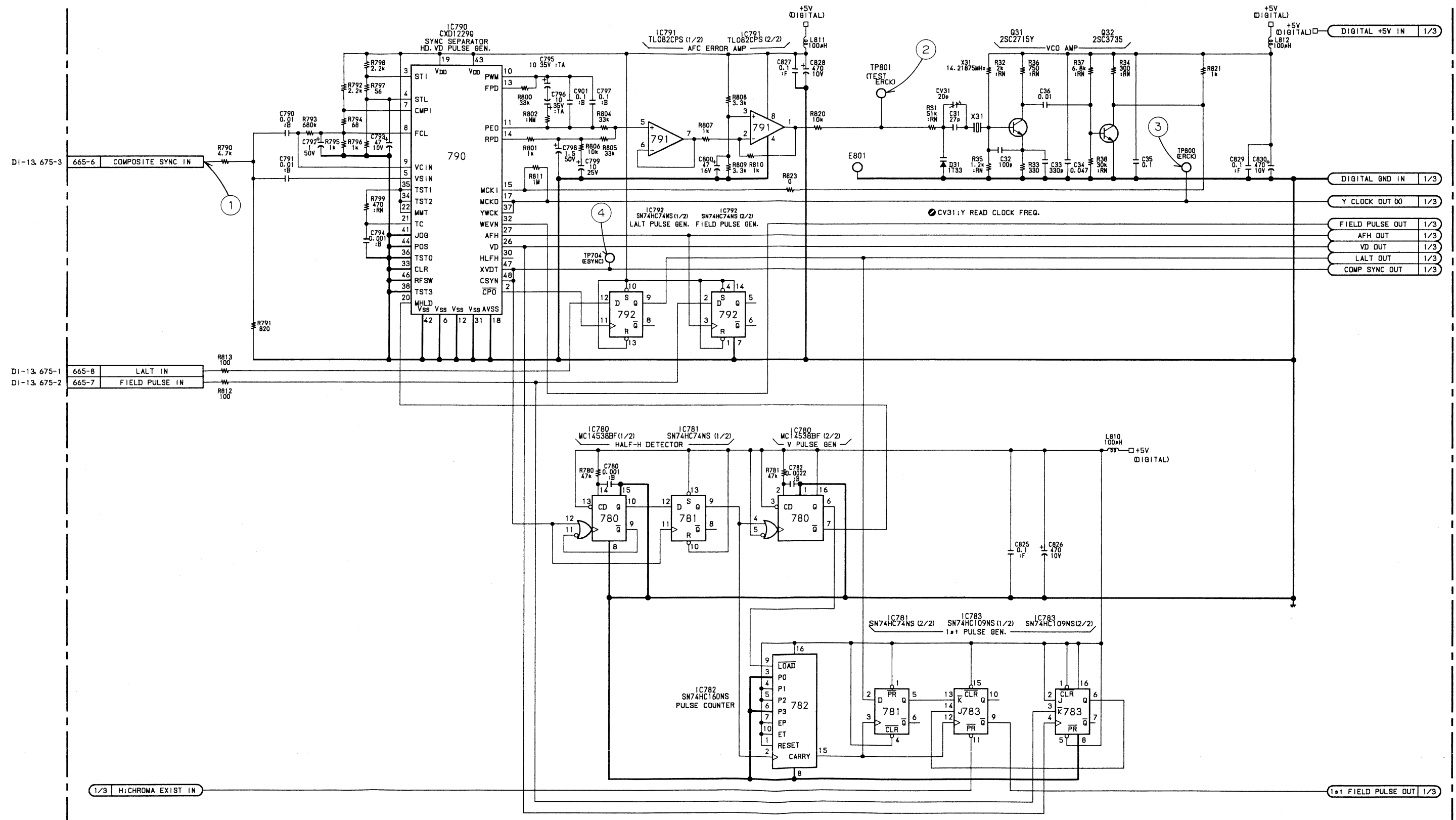


⑨ TP503 EE mode



Measurement Condition
• Input Signal : Color Bars
• Cassette Tape : Alignment tape WR5-8CSE
(Color Bars Signal)

DI-12 (2/3); READ TIMING CONTROL PULSE GENERATOR

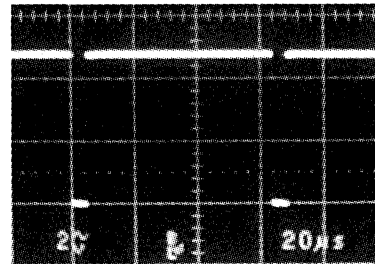


DI-12(2/3)

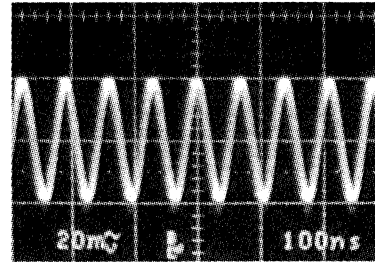
I-635-082-11, 12 (1)
EVO-9800P

DI-12 (2/3)

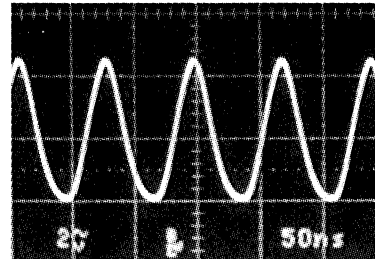
① CN665-6 EE mode



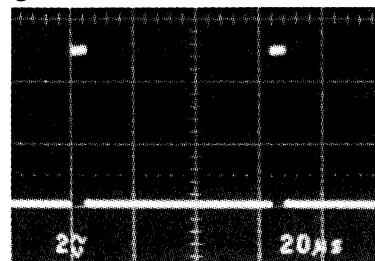
② TP801 EE mode 14.21MHz



③ TP800 EE mode 14.21MHz



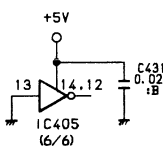
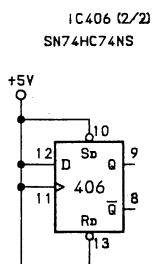
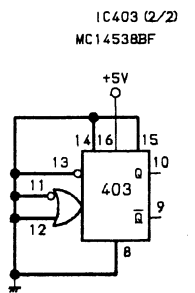
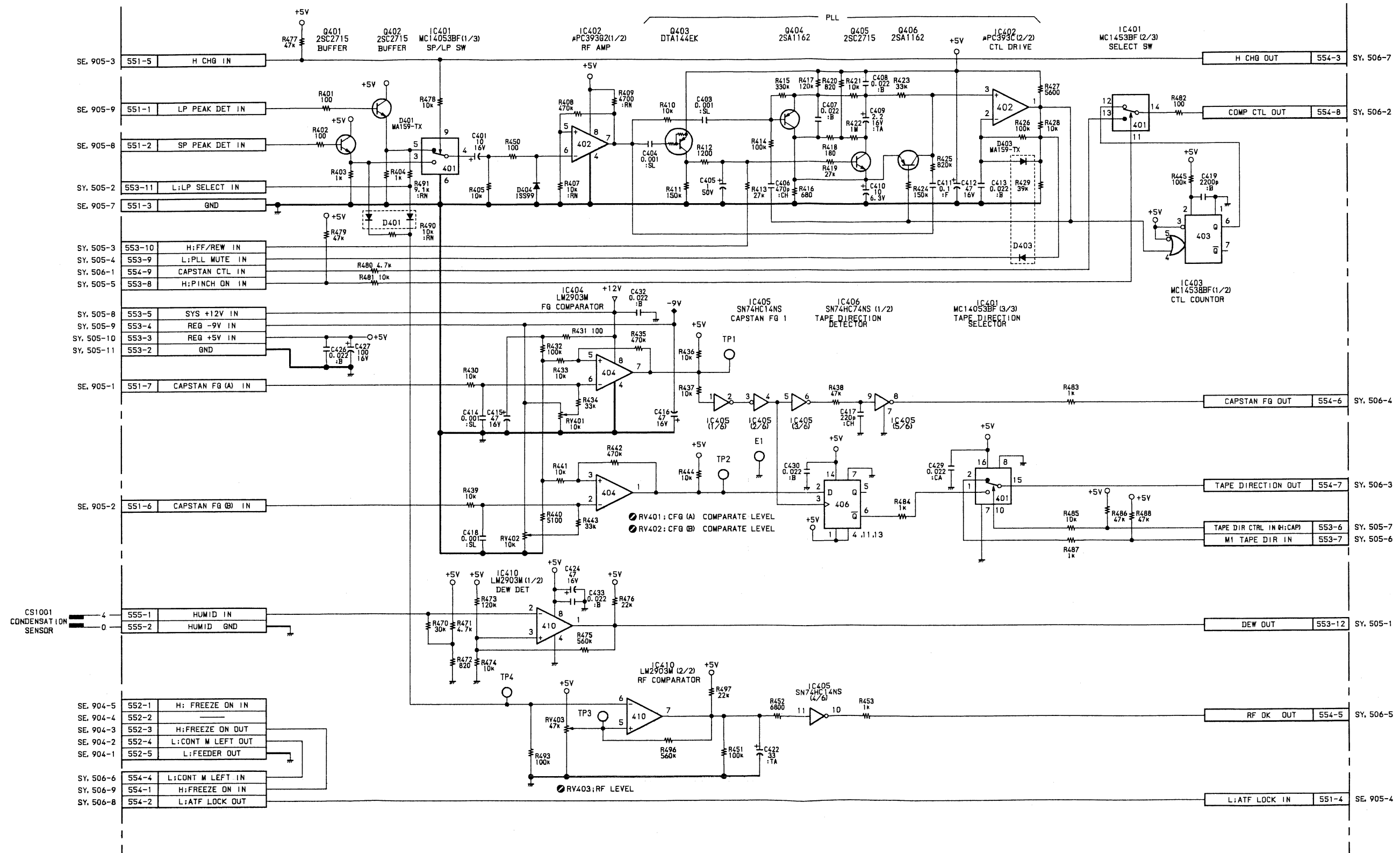
④ TP704 EE mode



Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE
(Color Bars Signal)

DI-12 (3/3); CTL DETECT/CAPSTAN FG COMPARE



DI-12(3/3)

I-635-082-11, 12 (1)
EVO-9800P

DI-12; DIGITAL CHROMA NOISE REDUCER

DI-12(1-635-082-11, 12) A SIDE

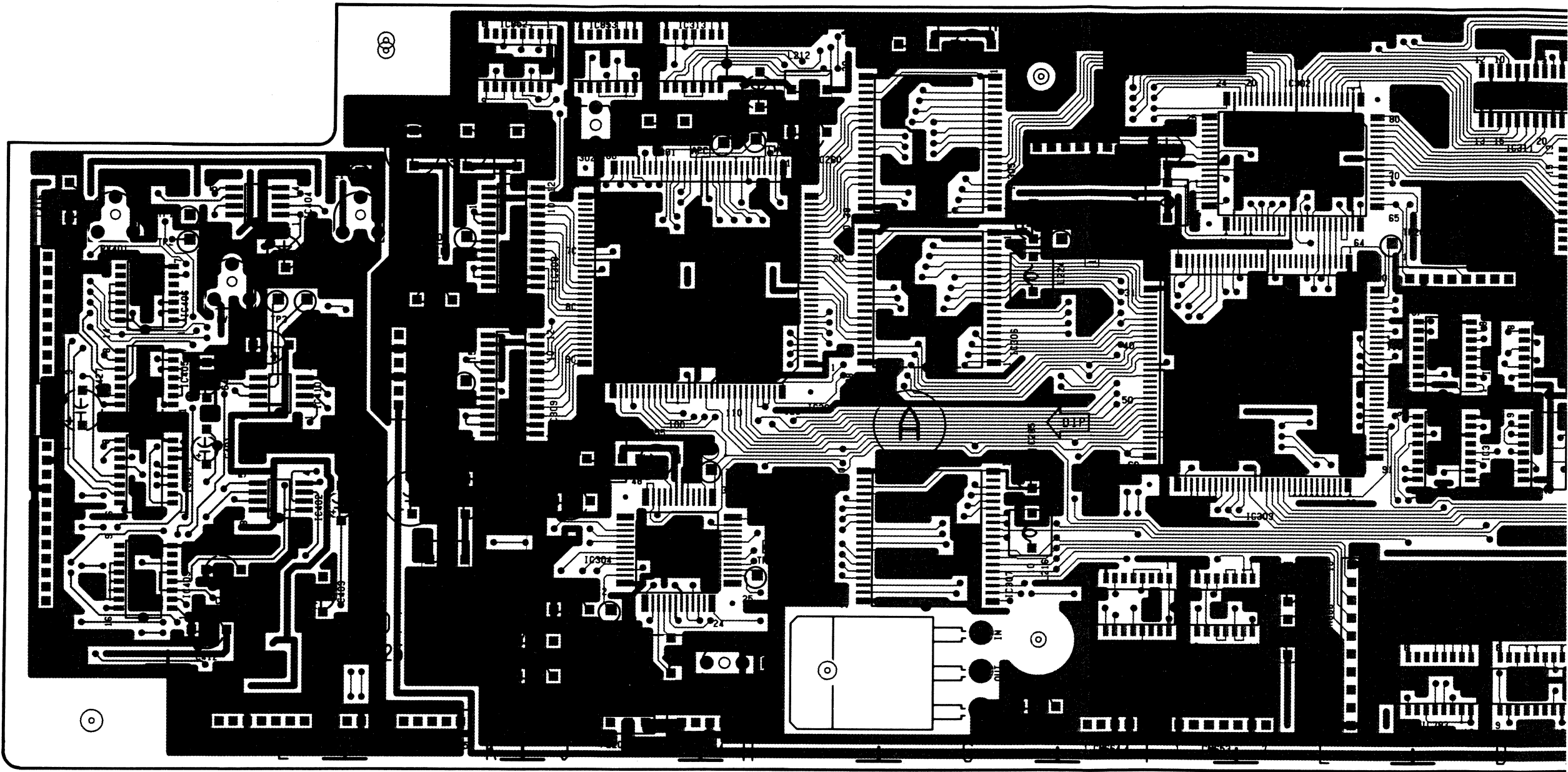
| | | | |
|-------|-----|-------|-----|
| CN 51 | L-1 | TP201 | J-1 |
| CN552 | K-1 | TP204 | H-2 |
| CN553 | M-2 | TP209 | E-4 |
| CN 54 | M-3 | TP500 | K-3 |
| CN 55 | K-1 | TP501 | K-3 |
| CN653 | F-1 | TP502 | B-4 |
| CN654 | H-1 | TP503 | B-4 |
| CN 55 | F-4 | TP704 | B-1 |
| CN 51 | B-4 | TP705 | F-3 |
| CN662 | K-3 | | |
| CN663 | B-1 | X31 | A-3 |
| CN 54 | F-1 | X301 | J-4 |
| CN 55 | D-3 | | |

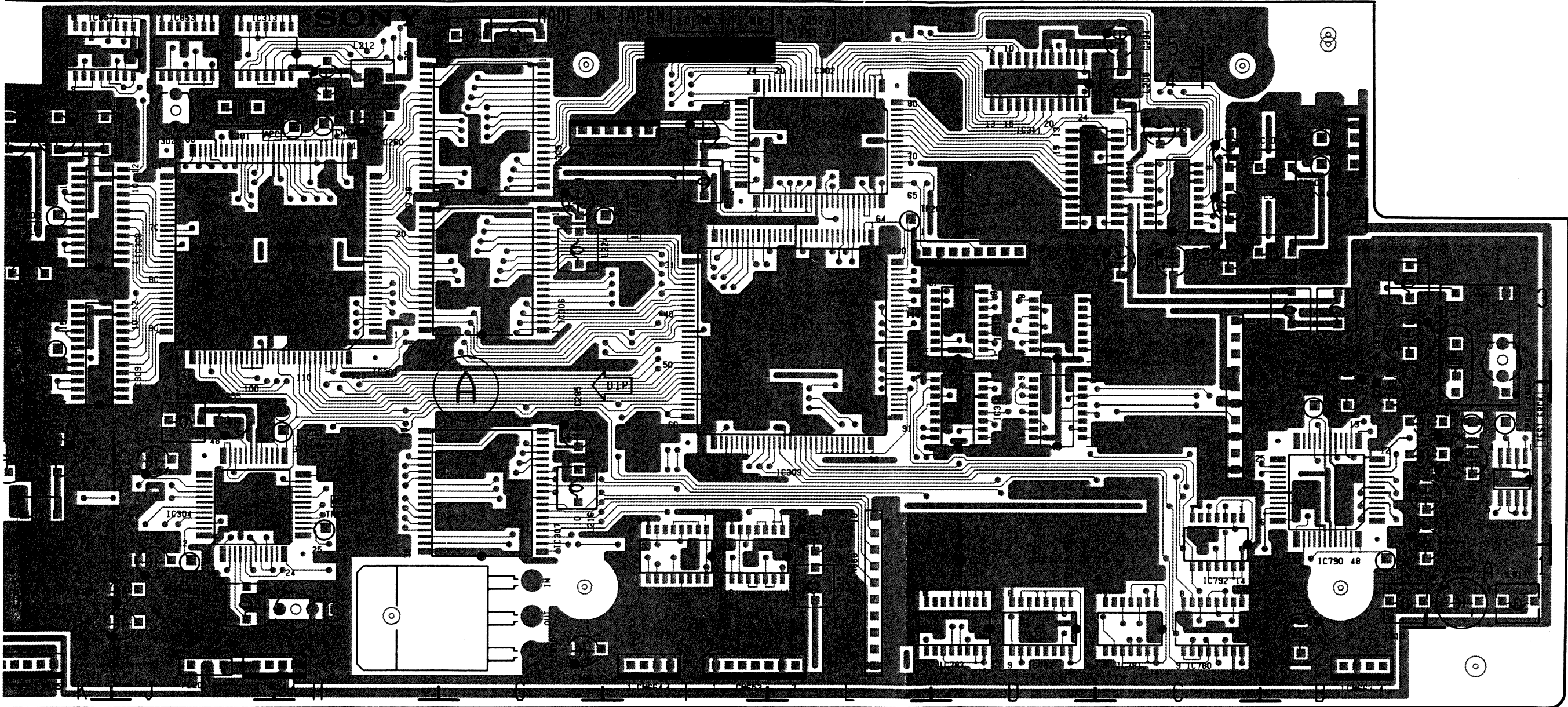
| | |
|-------|-----|
| CV 51 | A-3 |
| CV 51 | H-1 |
| CV 52 | J-4 |

| | |
|------|-----|
| FL 1 | J-1 |
|------|-----|

| | |
|------|-----|
| C301 | H-3 |
| C302 | E-4 |
| C3 3 | E-2 |
| C3 4 | J-2 |
| C308 | J-3 |
| C309 | J-2 |
| C3 5 | C-4 |
| C3 1 | D-4 |
| C312 | D-3 |
| C313 | J-5 |
| C3 5 | D-2 |
| C4 1 | L-2 |
| C402 | L-2 |
| C403 | L-1 |
| C4 4 | L-4 |
| C4 5 | L-3 |
| C406 | L-3 |
| C4 5 | L-3 |
| C5 5 | G-1 |
| C5 1 | C-3 |
| C780 | C-1 |
| C7 1 | C-1 |
| C7 2 | D-1 |
| C763 | D-1 |
| C790 | B-1 |
| C7 1 | A-2 |
| C7 2 | C-1 |
| C850 | D-3 |
| C851 | D-2 |
| C8 2 | K-5 |
| C8 3 | J-5 |
| C854 | F-1 |
| C855 | F-1 |

| | |
|------|-----|
| V 1 | M-3 |
| V402 | K-3 |
| V403 | L-3 |





DI-12 A SIDE
I-635-082-11, 12(I)
EVO-9800P

A Side is the same as COMPONENT Side

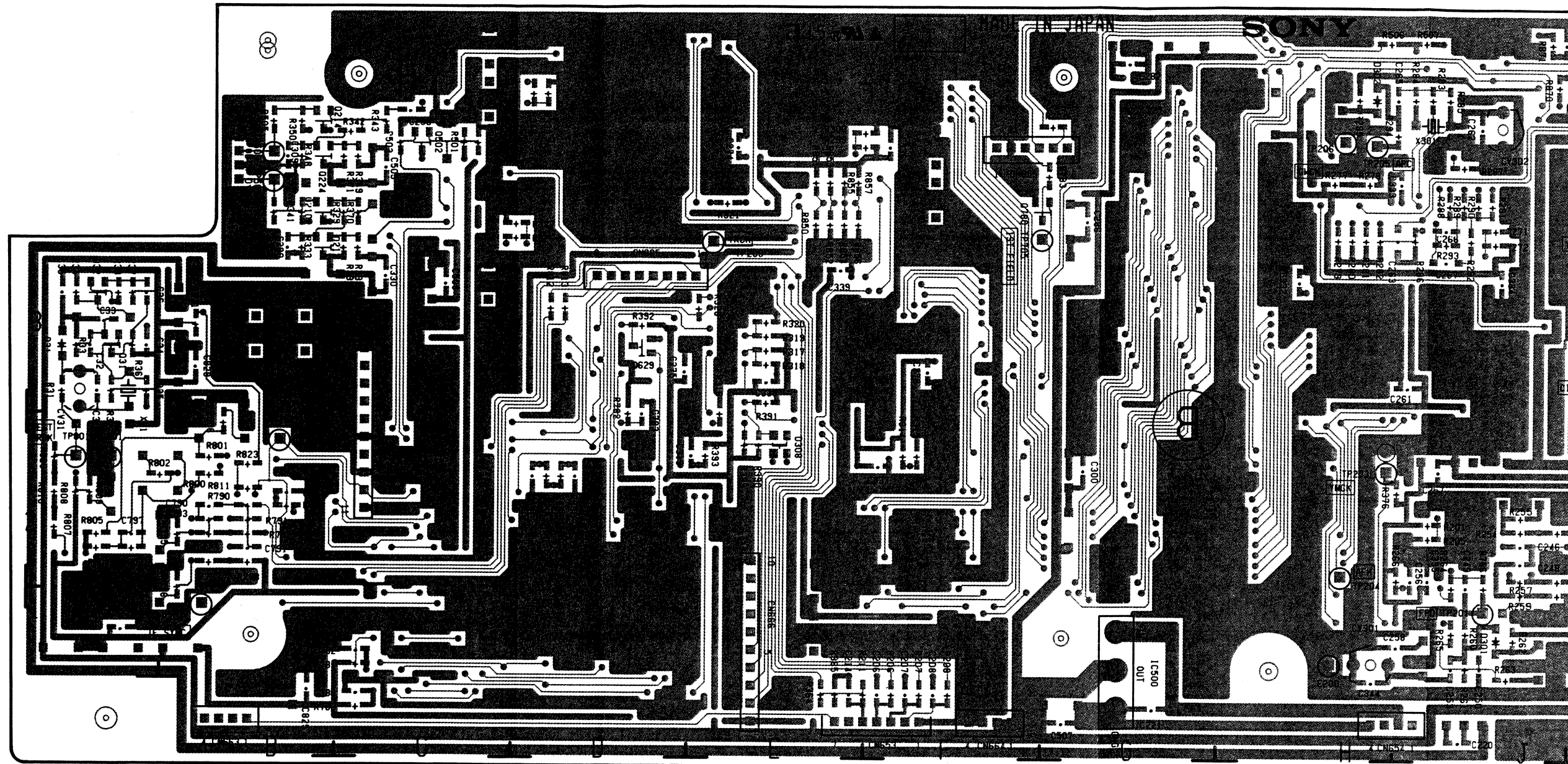
2(1-635-082-11, 12) B SIDE

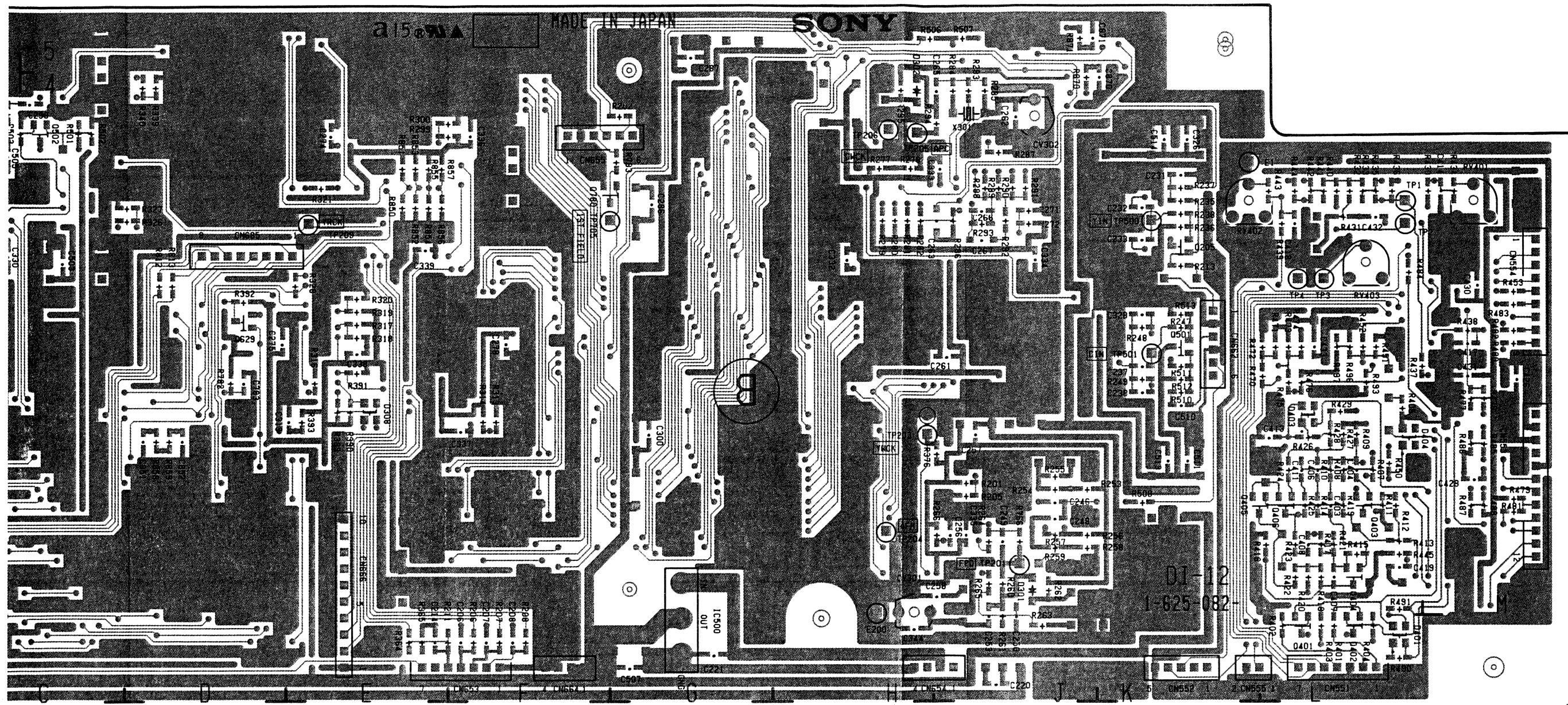
A-3
J-1
H-4
E-2
L-1
L-2

L-4
H-1
A-2

A-3
A-3
K-3
B-4
B-3
B-4
B-4
L-1
L-1
L-2
L-1
K-2
L-2
K-3
C-4
D-3
F-4

L-4
L-3
L-3
L-3
H-2
H-4
H-4
B-2
A-2





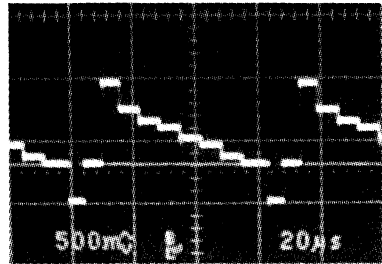
DI-12 B SIDE
1-635-082-11, 12 (1)
EVO-9800P

B Side is the same as SOLDER Side

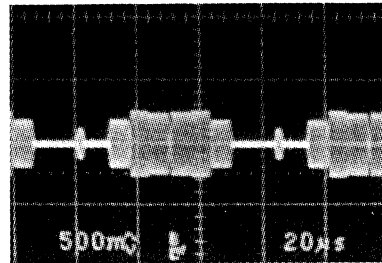
DI-13 (1/2); DIGITAL CNR INPUT/OUTPUT BUFFER

DI-13 (1/2)

① TP651 EE mode

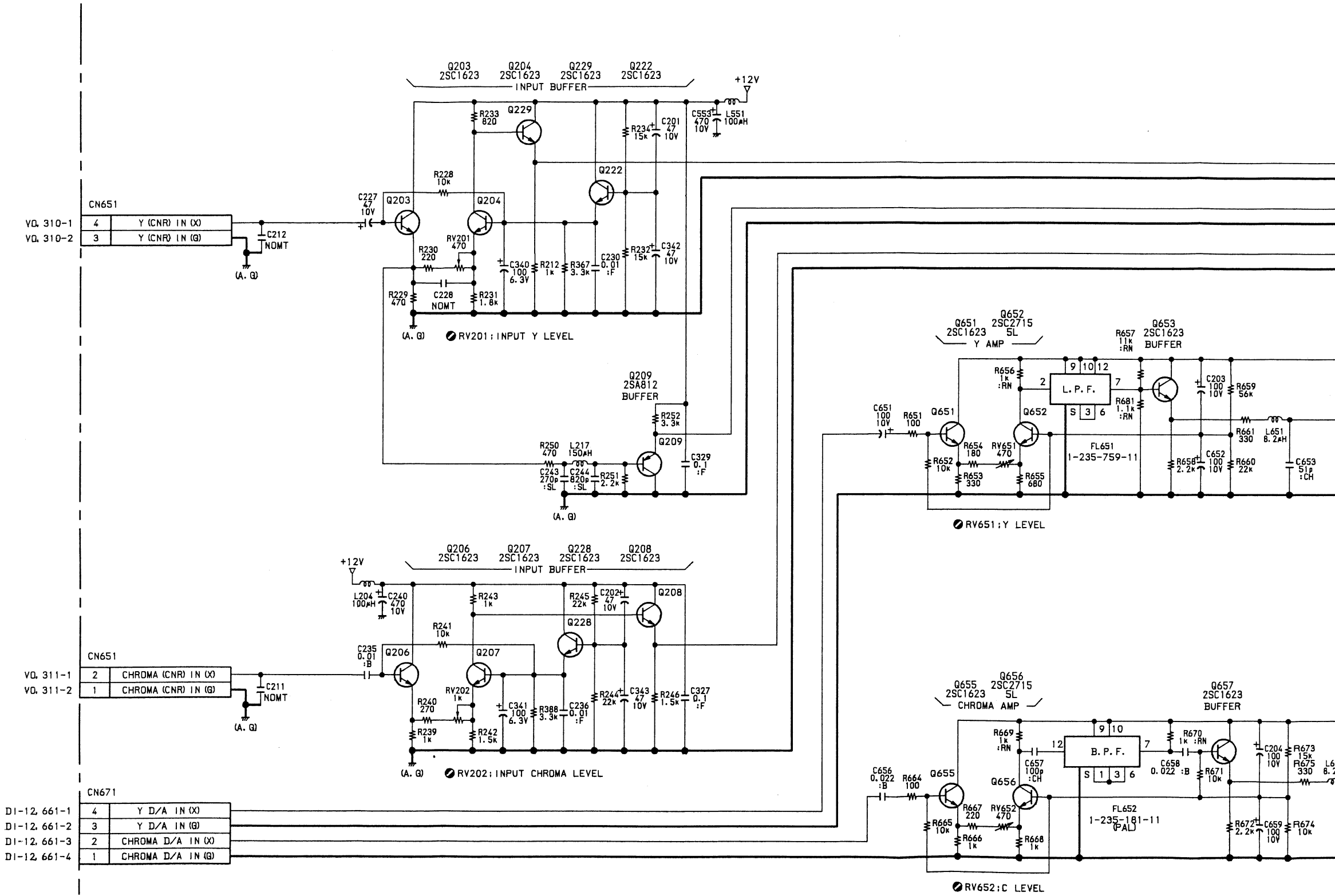


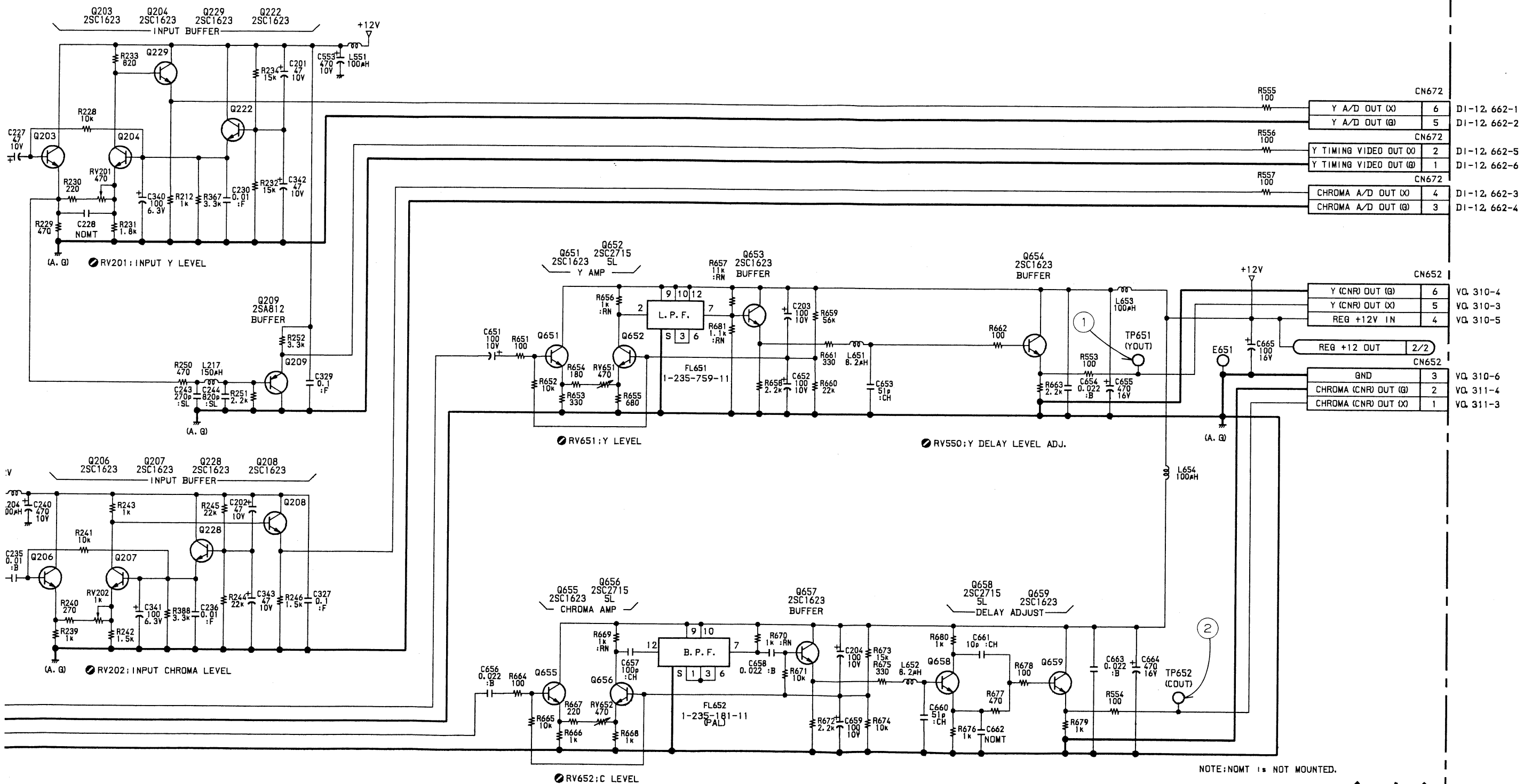
② TP652 EE mode



Measurement Condition

- Input Signal : Color Bars
- Cassette Tape : Alignment tape WR5-8CSE (Color Bars Signal)

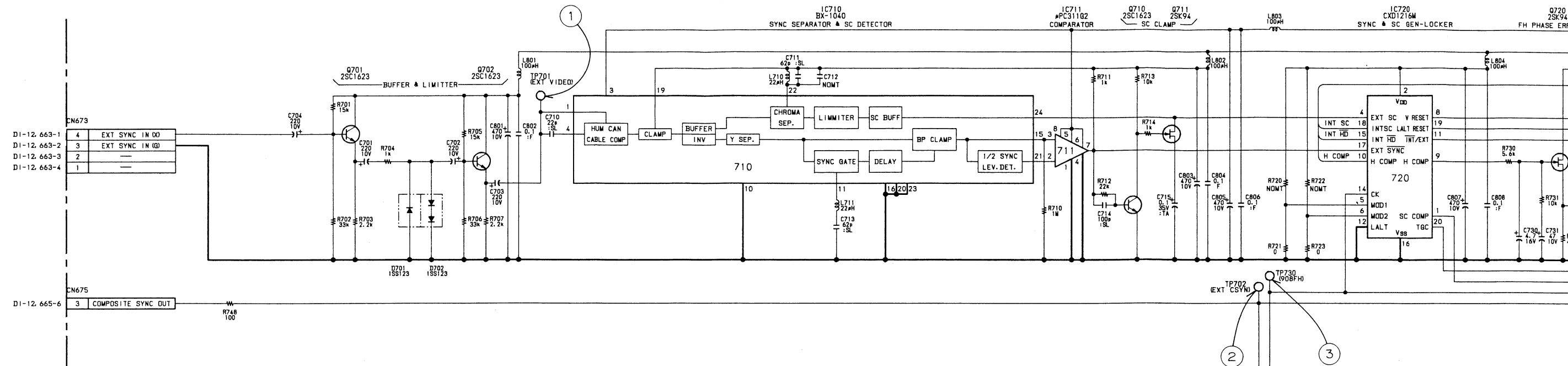




DI-13(1/2)

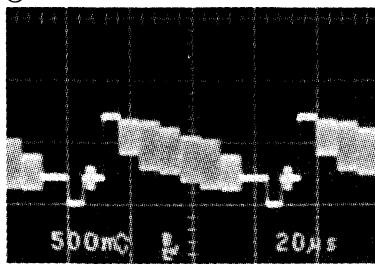
1-635-083-11(1)
EVO-9800P

DI-13 (2/2); EXTERNAL/INTERNAL GENERATOR LOCKER

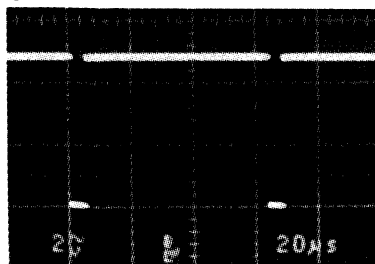


DI-13 (2/2)

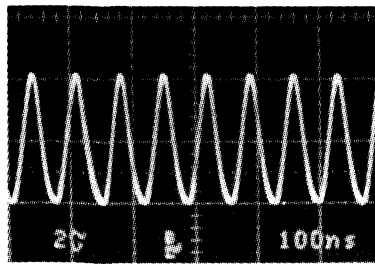
① TP701 EE mode



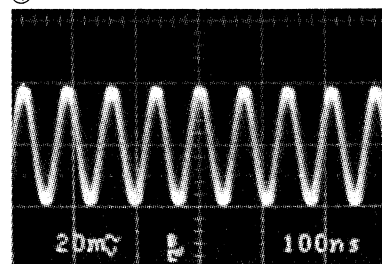
② TP702 EE mode



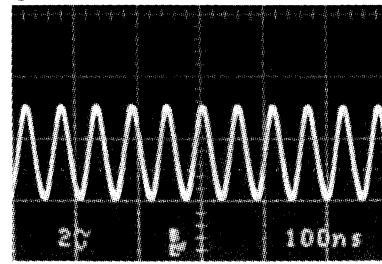
③ TP730 EE mode 14.18MHz



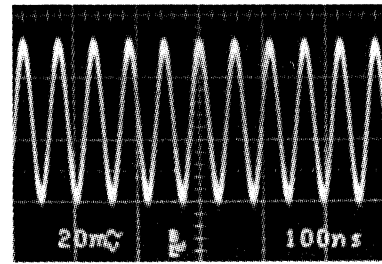
④ TP731 EE mode 14.18MHz



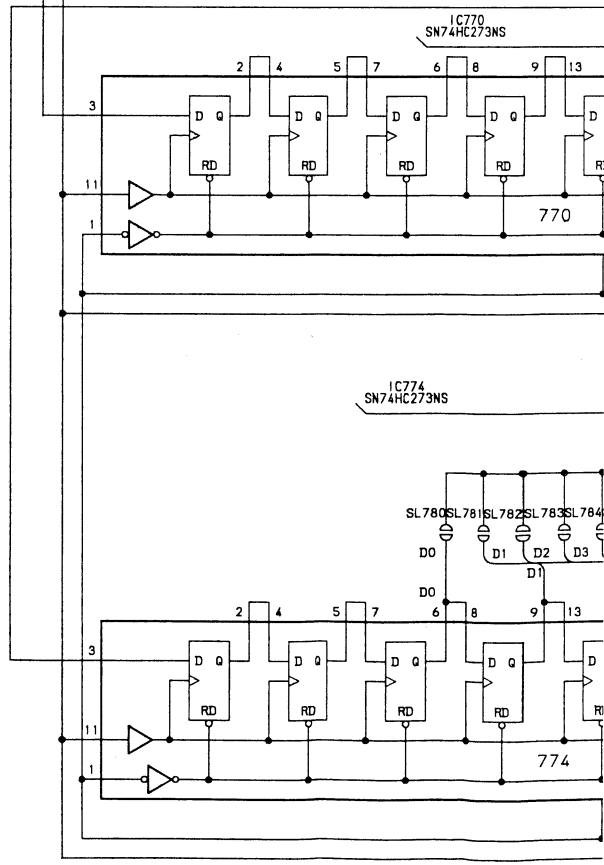
⑤ TP760 EE mode 17.73MHz

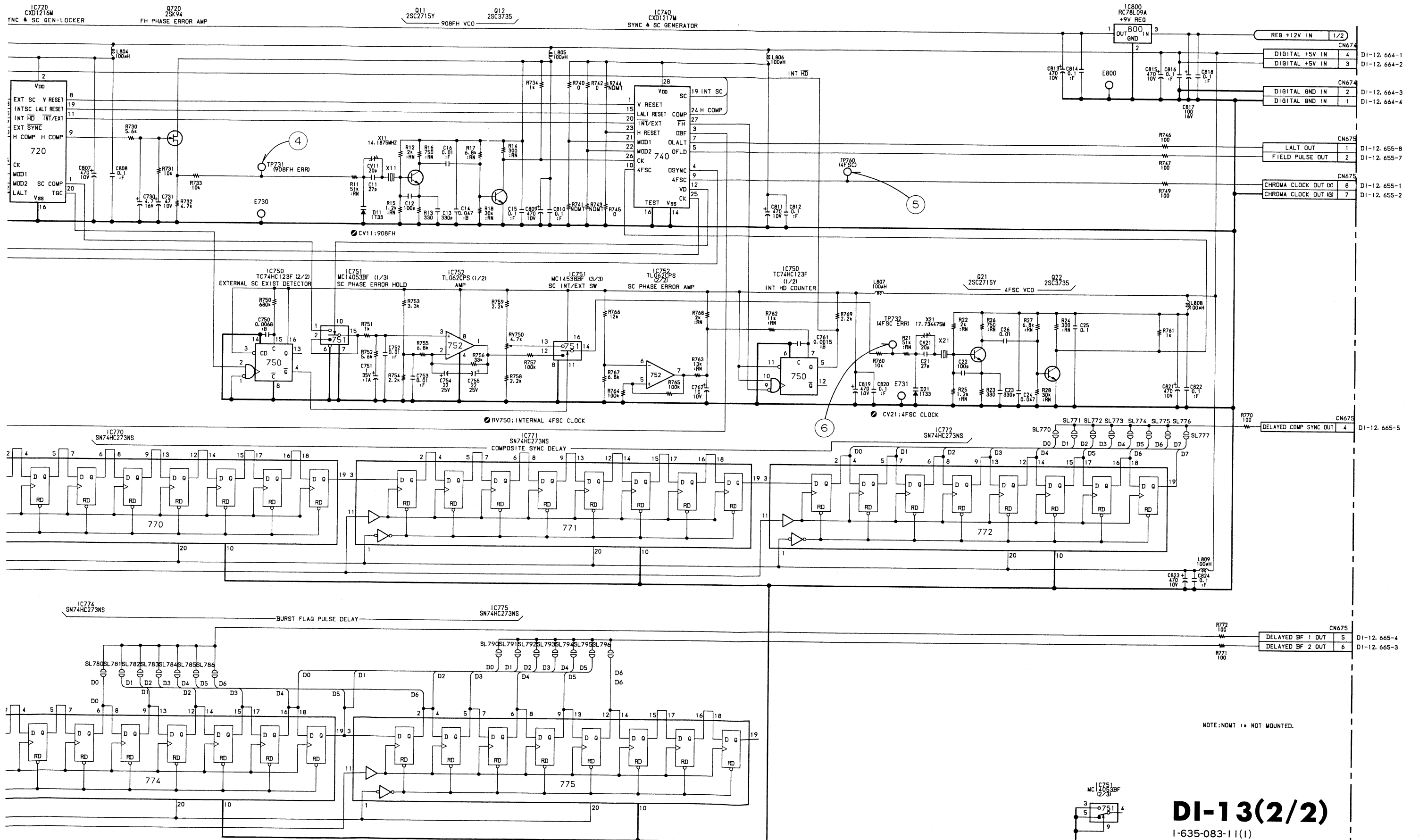


⑥ TP732 EE mode 17.73MHz



Measurement Condition
• Input Signal : Color Bars (SYNC IN)



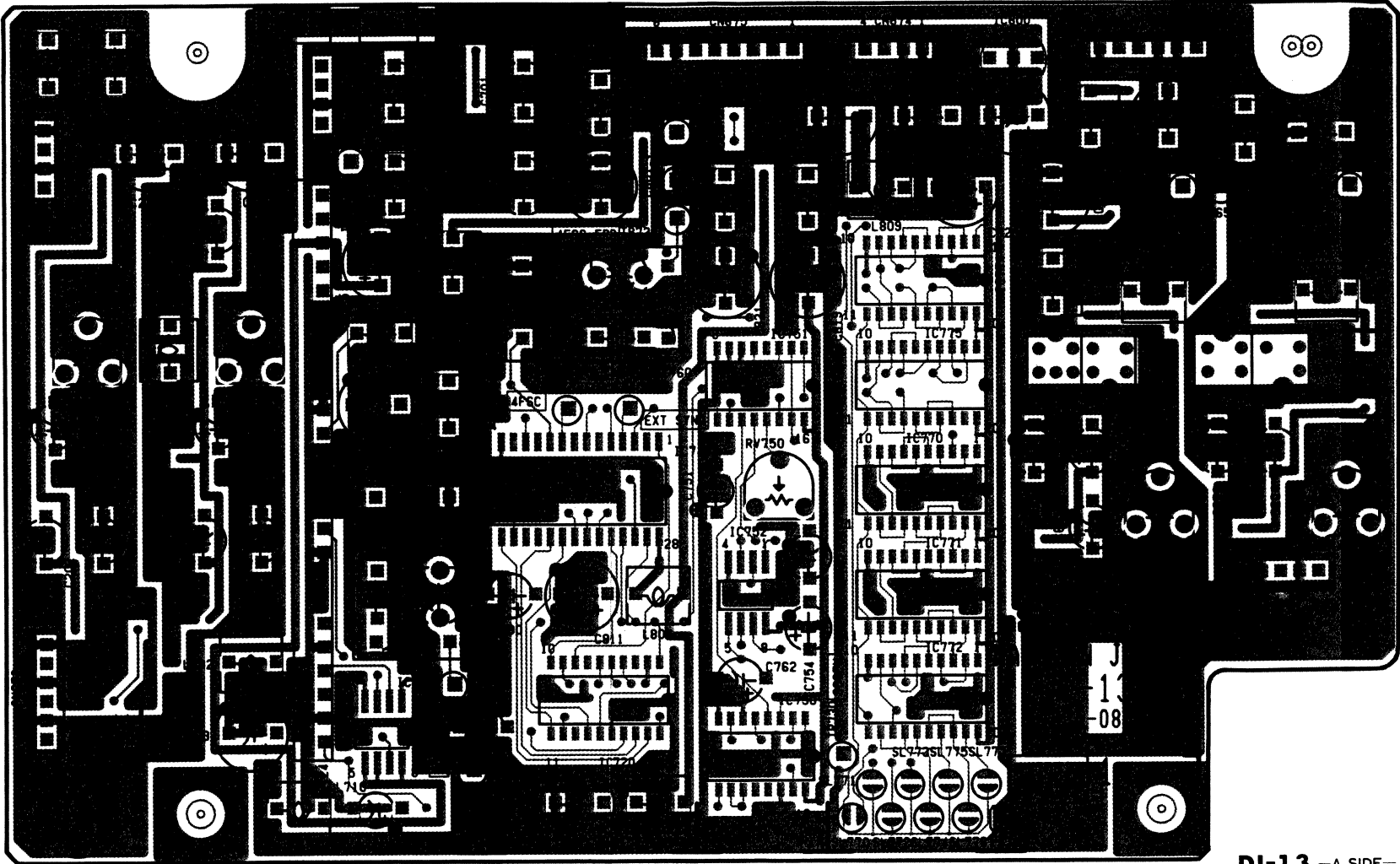


DI-13(2/2)
I-635-083-11(I)
EVO-9800P

DI-13; EXTERNAL/INTERNAL GENERATOR LOCKER

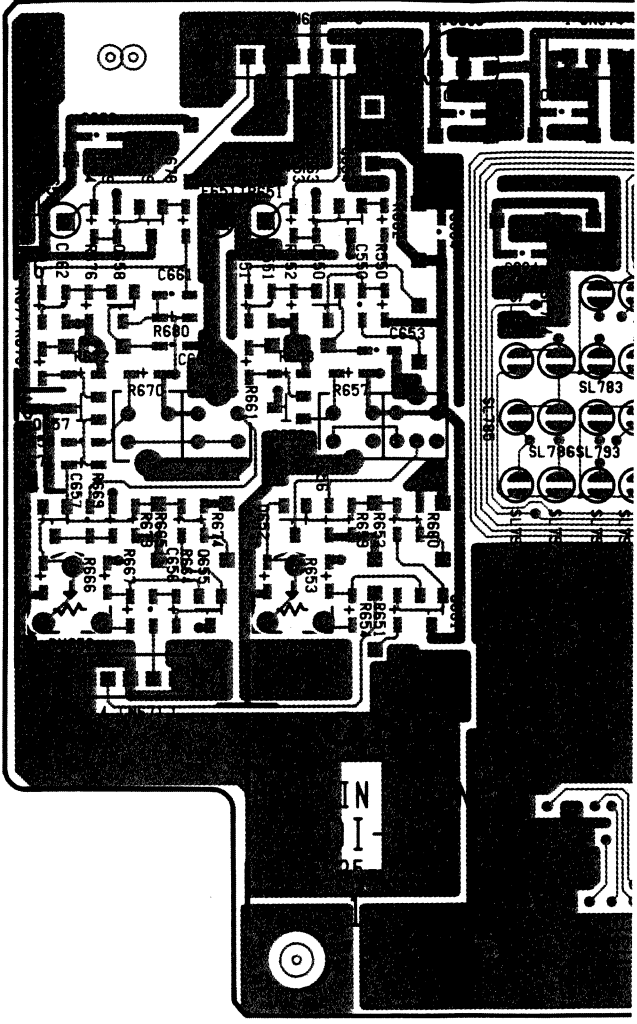
DI-13(1-635-083-11) A SIDE DI-13(1-635-083-11) B SIDE

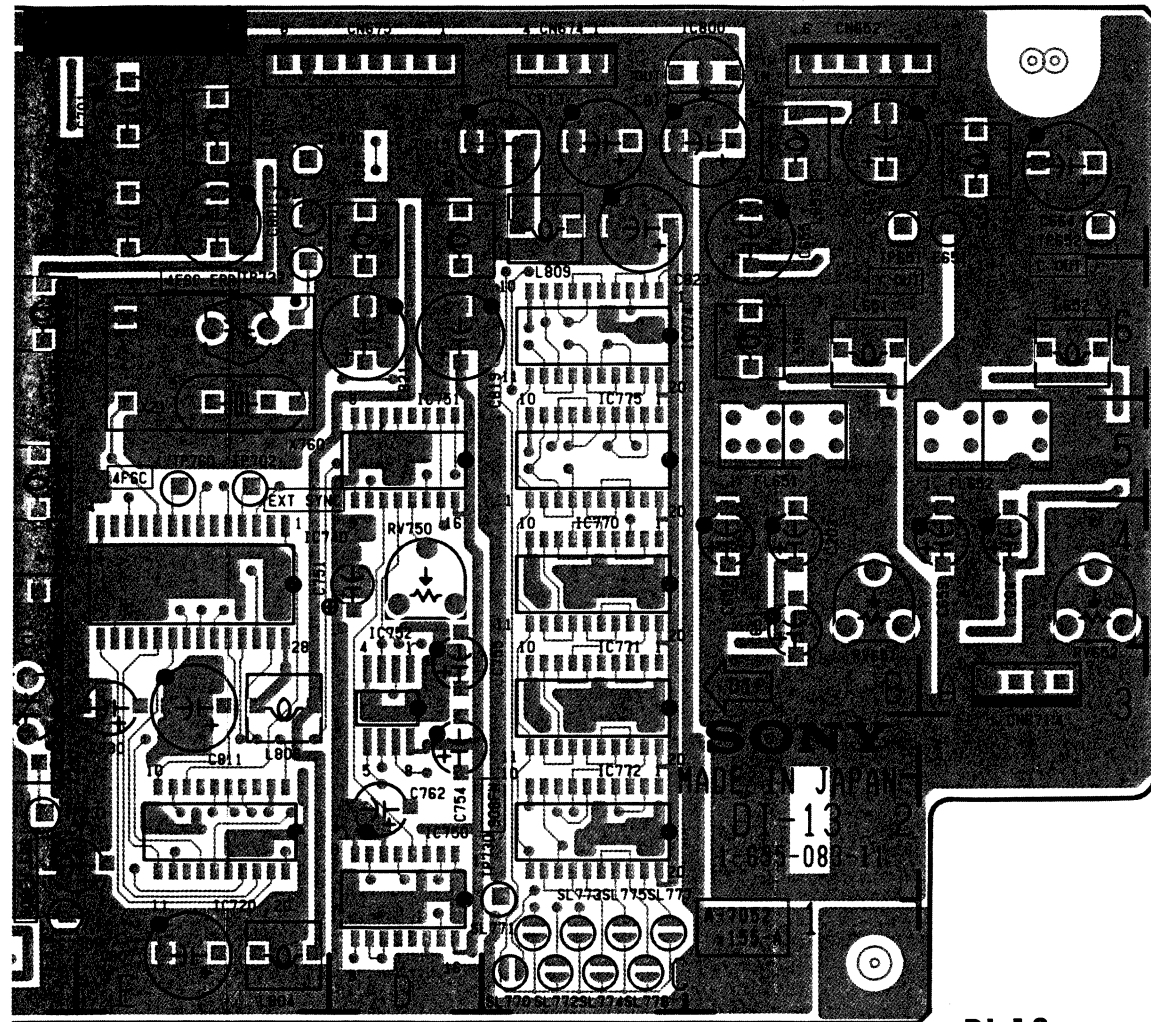
| | | | |
|-------|-----|------|-----|
| V651 | H-7 | D11 | F-4 |
| CN652 | B-7 | D21 | E-6 |
| CN671 | A-3 | D701 | E-7 |
| V672 | H-2 | D702 | F-7 |
| CN673 | F-7 | | |
| CN674 | C-7 | Q11 | F-3 |
| CN675 | D-7 | Q12 | F-4 |
| | | Q21 | E-6 |
| CV11 | F-3 | Q22 | F-6 |
| CV21 | E-6 | Q203 | G-6 |
| | | Q204 | G-4 |
| 551 | A-7 | Q206 | H-6 |
| E730 | F-1 | Q207 | H-4 |
| E731 | E-7 | Q208 | H-3 |
| 300 | D-7 | Q209 | G-4 |
| | | Q222 | G-4 |
| FL651 | B-5 | Q228 | H-4 |
| FL652 | A-5 | Q229 | G-3 |
| | | Q550 | B-6 |
| 710 | F-6 | Q651 | B-4 |
| IC711 | F-2 | Q652 | B-4 |
| IC720 | E-1 | Q653 | B-5 |
| 740 | E-4 | Q654 | B-7 |
| 750 | D-2 | Q655 | A-4 |
| IC751 | D-5 | Q656 | A-4 |
| IC752 | D-4 | Q657 | A-5 |
| 770 | C-4 | Q658 | A-6 |
| 771 | C-3 | Q659 | A-7 |
| IC772 | C-3 | Q701 | F-7 |
| 774 | C-6 | Q702 | F-6 |
| 775 | C-5 | Q710 | F-2 |
| 800 | B-7 | Q711 | F-1 |
| | | Q720 | E-2 |
| V201 | G-5 | | |
| V202 | H-5 | | |
| RV651 | B-3 | | |
| RV652 | A-3 | | |
| V750 | D-4 | | |
| TP651 | B-7 | | |
| TP652 | A-7 | | |
| P701 | F-7 | | |
| P702 | E-5 | | |
| TP703 | C-2 | | |
| TP731 | F-2 | | |
| P732 | E-6 | | |
| P760 | E-5 | | |
| V11 | F-4 | | |
| 21 | E-5 | | |



DI-13 — A SIDE —
1-635-083-11(1)
EVO-9800P

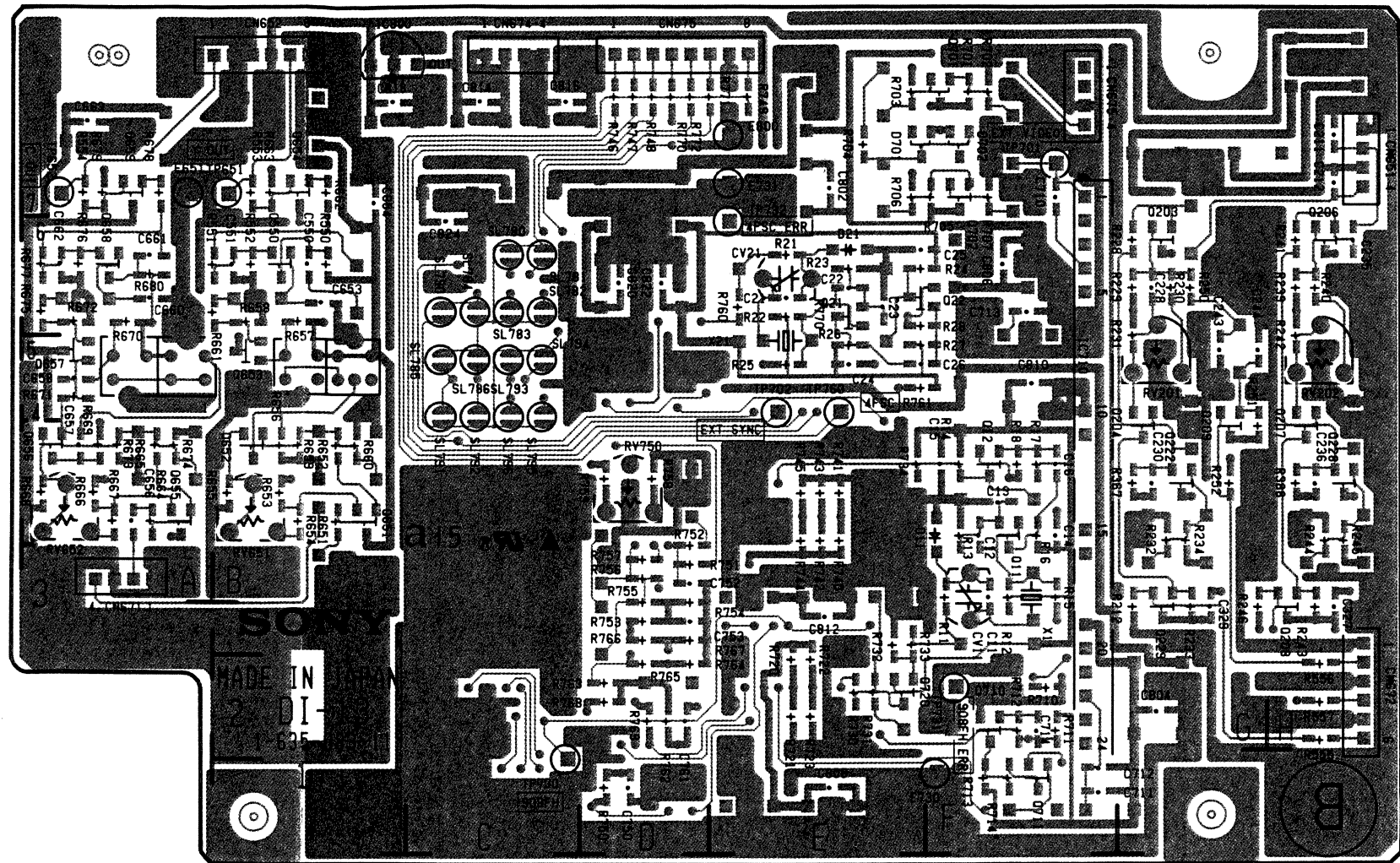
A Side is the same as COMPONENT Side





DI-13 — A SIDE —
1-635-083-11(1)
EVO-9800P

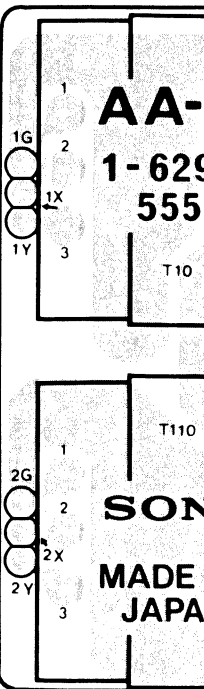
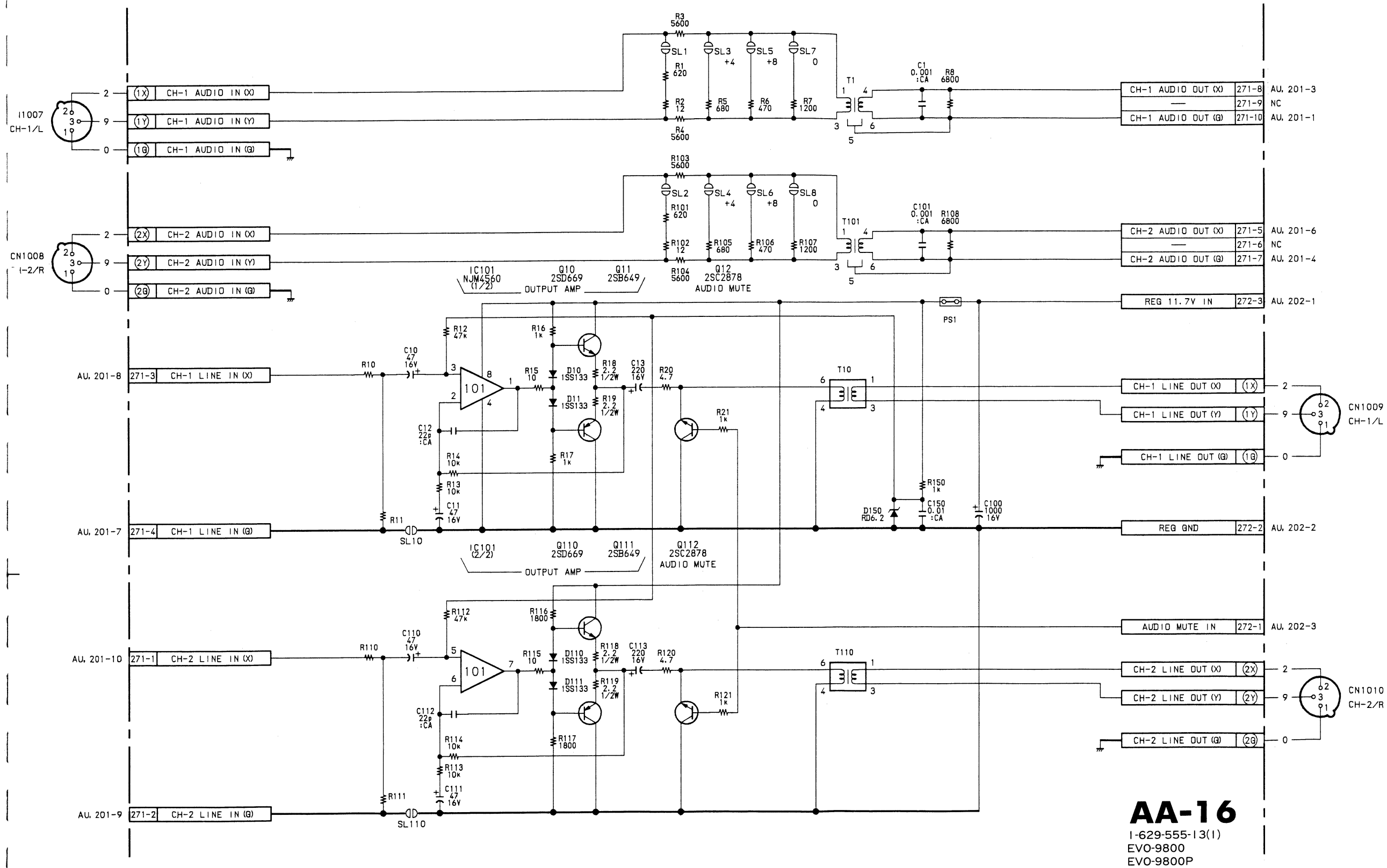
A Side is the same as COMPONENT Side



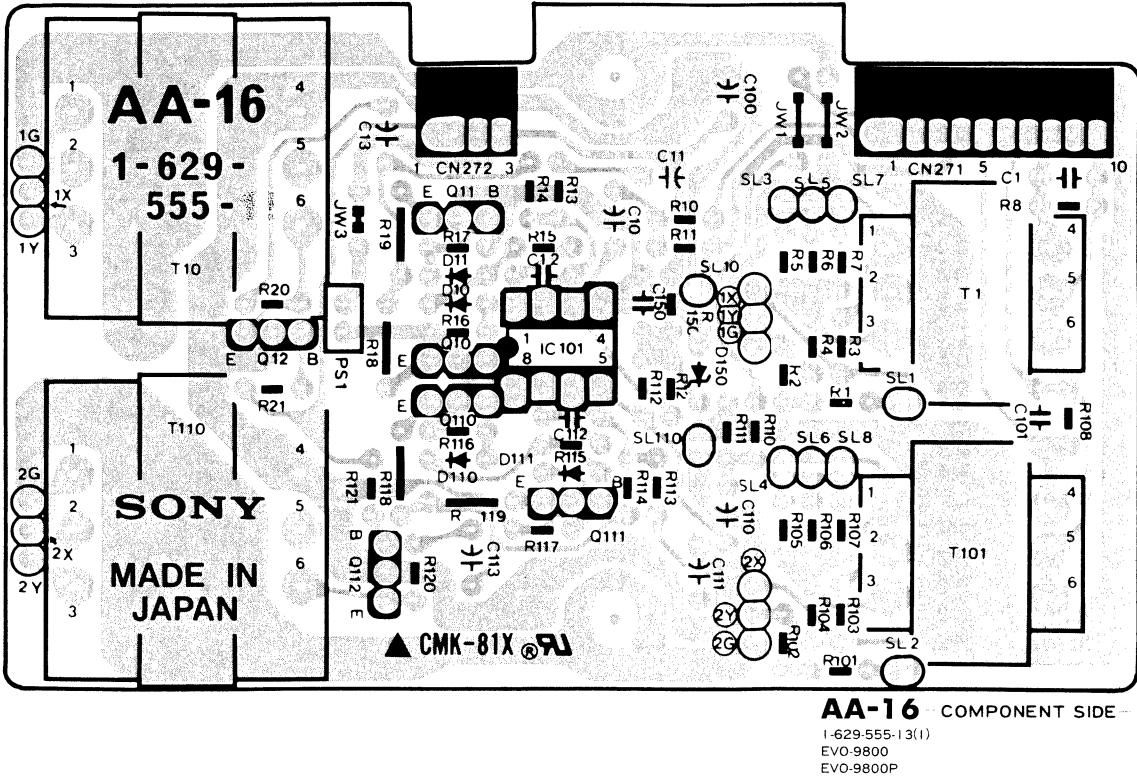
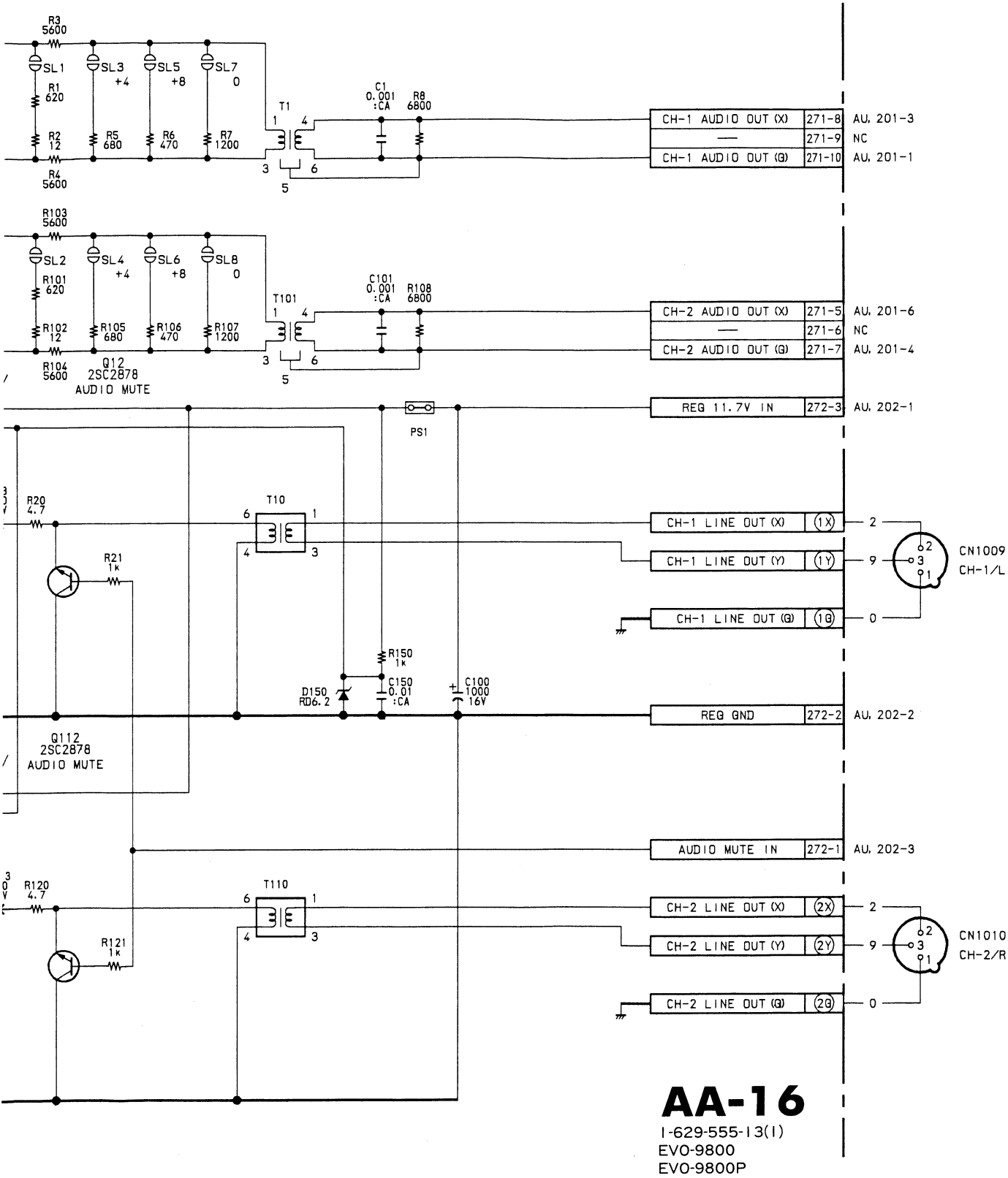
DI-13 — B SIDE —
1-635-083-11(1)
EVO-9800P

B Side is the same as SOLDER Side

6 XLR INPUT/OUTPUT AMPLIFIER



AA-16; XLR INPUT/OUTPUT AMPLIFIER



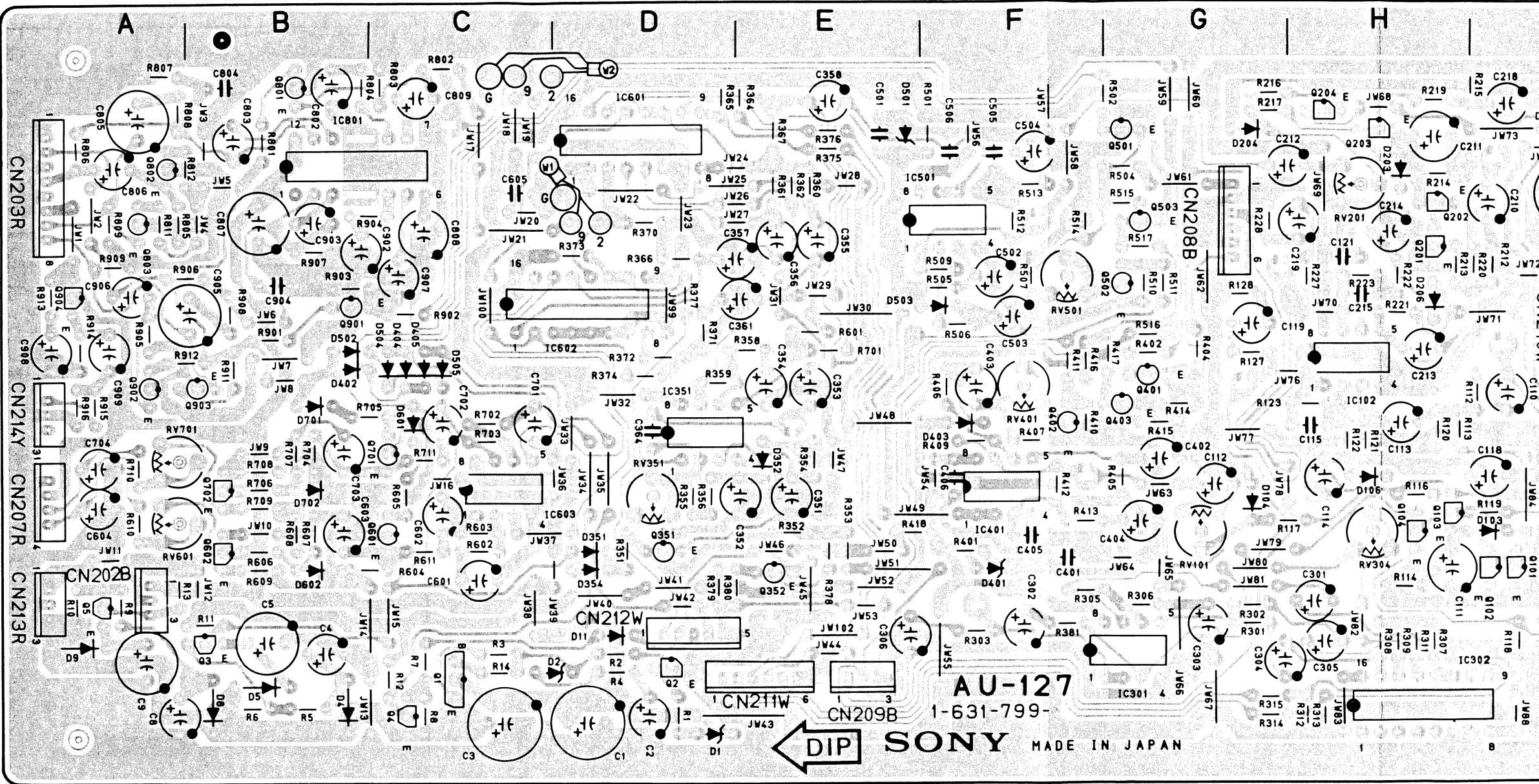
AU-127; AUDIO REC/PB AMPLIFIER

AU-127(1-631-799-12) A SIDE

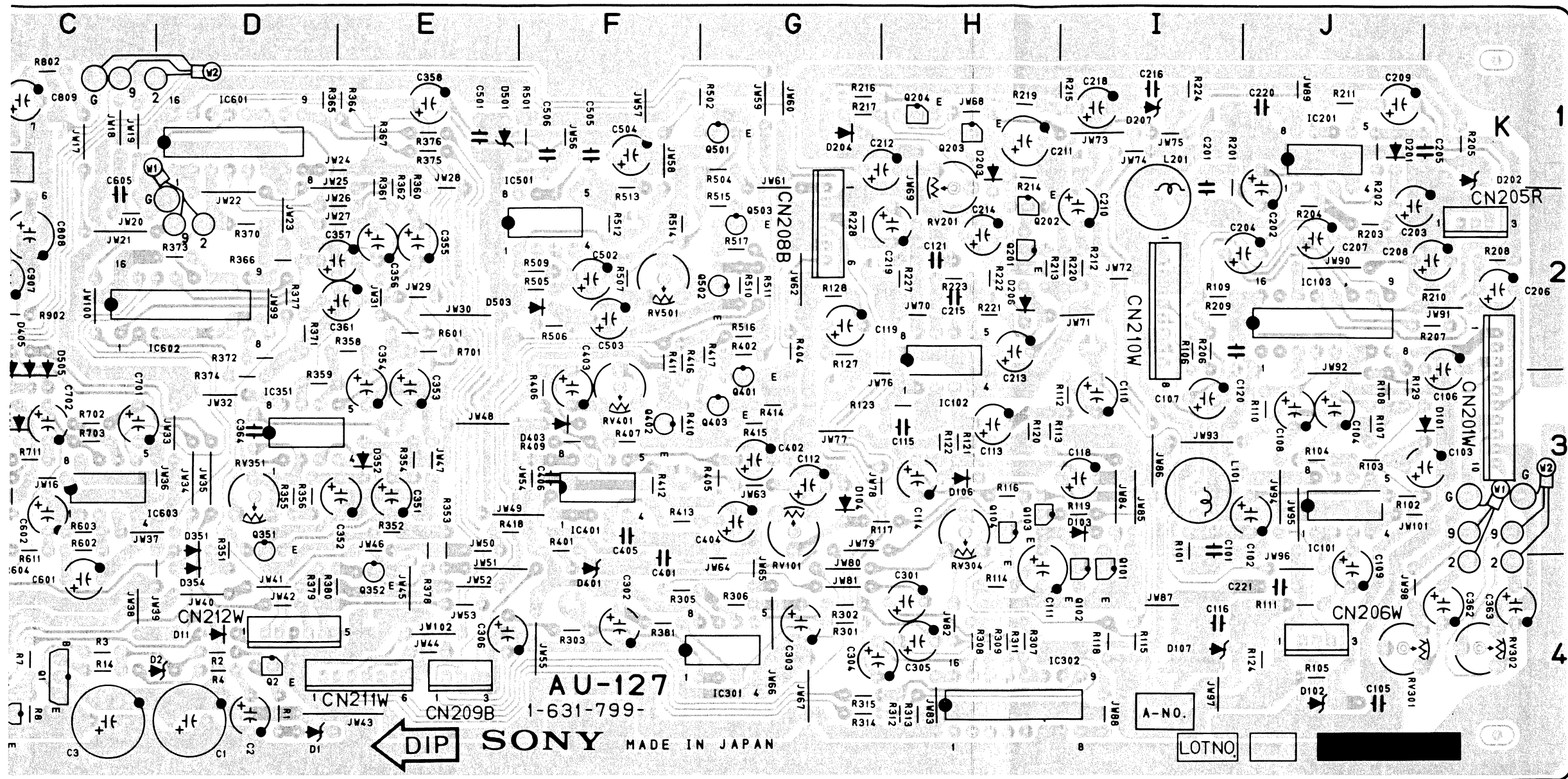
| | | | |
|-------|------|-------|------|
| CN201 | K-3 | IC103 | J-2 |
| CN202 | A-4 | IC201 | J-1 |
| CN203 | A-1 | IC301 | G-4 |
| CN205 | K-2 | IC302 | I-4 |
| CN206 | J-4 | IC351 | D-3 |
| CN207 | A-3 | IC401 | F-3 |
| CN208 | G-2 | IC501 | F-1 |
| CN209 | E-4 | IC601 | D-1 |
| CN210 | I-2 | IC602 | D-2 |
| CN211 | E-4 | IC603 | D-3 |
| CN212 | D-4 | IC801 | B-1 |
| CN213 | A-4 | | |
| CN214 | A-3 | Q1 | C-4 |
| | | Q2 | D-4 |
| D1 | D-4 | Q3 | B-4 |
| D2 | C-4 | Q4 | C-4 |
| D4 | B-4 | Q5 | A-4 |
| D5 | B-4 | Q101 | I-4 |
| D8 | B-4 | Q102 | I-4 |
| D9 | A-4 | Q103 | H-3 |
| D11 | D-4 | Q104 | H-3 |
| D101 | K-3 | Q201 | H-2 |
| D102 | J-4 | Q202 | H-2 |
| D103 | I-3 | Q203 | H-1 |
| D104 | G-3 | Q204 | H-1 |
| D106 | H-3 | Q351 | D-3 |
| D107 | I-4 | Q352 | E-4 |
| D201 | J-1 | Q401 | G-3 |
| D202 | K-1 | Q402 | F-3 |
| D203 | H-1 | Q403 | G-3 |
| D204 | G-1 | Q501 | G-1 |
| D206 | H-2 | Q502 | G-2 |
| D207 | I-1 | Q503 | G-2 |
| D351 | D-3 | Q601 | C-3 |
| D352 | E-3 | Q602 | B-3 |
| D354 | D-4 | Q701 | C-3 |
| D401 | F-4 | Q702 | B-3 |
| D402 | B-3 | Q801 | B-1 |
| D403 | F-3 | Q802 | A-1 |
| D404 | C-2 | Q803 | A-2 |
| D405 | C-2 | Q901 | B-2 |
| D501 | E-1 | Q902 | A-3 |
| D502 | B-2 | Q903 | B-3 |
| D503 | E-2 | Q904 | A-2 |
| D504 | C-2 | | |
| D505 | C-2 | RV101 | G-4 |
| D601 | C-3 | RV201 | H-2 |
| D602 | B-4 | RV301 | J-4 |
| D701 | B-3 | RV302 | K-4 |
| D702 | B-3 | RV351 | D-3 |
| | | RV401 | F-3 |
| E1 | C-1S | RV501 | F-2 |
| E2 | E-4S | RV601 | A-4 |
| E3 | J-1S | RV701 | A-3 |
| E4 | I-4S | | |
| | | TP101 | I-2S |
| IC101 | J-3 | TP102 | G-3S |
| IC102 | H-3 | TP201 | I-1S |

TP202 G-2S
TP301 F-4S
TP351 E-3S
TP401 F-3S
TP501 F-2S

S: B SIDE
(SOLDERING SIDE)



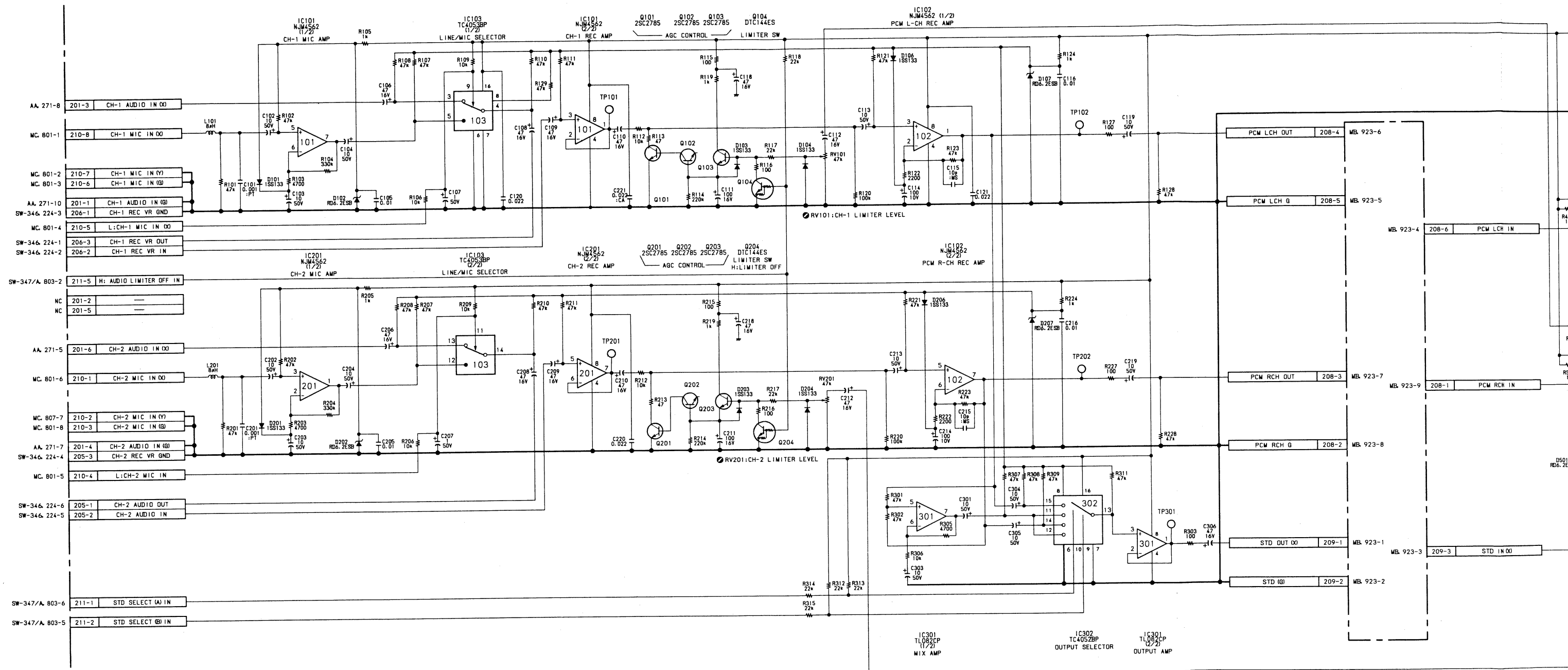
A Side

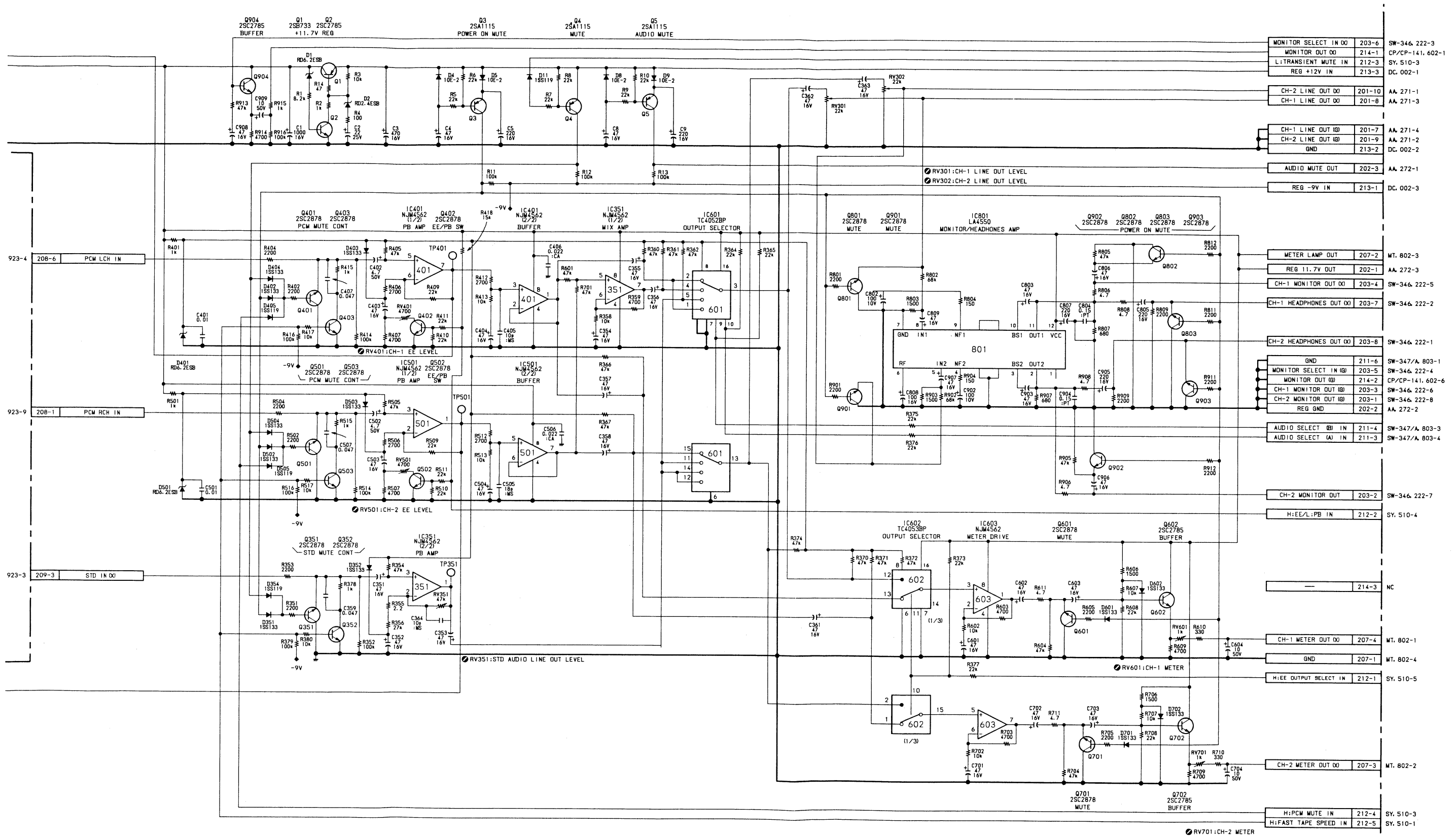


AU-127 —A SIDE—
1-631-799-12(1)
EVO-9800
EVO-9800P

A Side is the same as COMPONENT Side

AU-127; AUDIO REC/PB AMPLIFIER



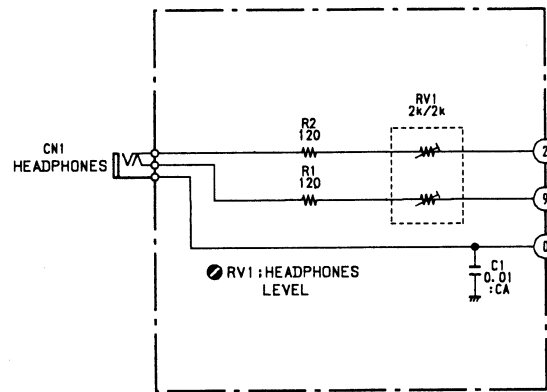


AU-127

I-631-799-12(1)
EVO-9800
EVO-9800P

HP-42; HEADPHONES LEVEL CONTROL
SW-346; AUDIO LEVEL CONTROL
MC-28; MICROPHONES JACK
MT-57; AUDIO LEVEL METER

HP-42; HEADPH
SW-346; AUDIO
MC-28; MICROP
MT-57; AUDIO L



HP-42
I-629-477-12(1)
EVO-9800
EVO-9800P

AU-127, 203-7
AU-127, 203-8

| | |
|-------|------------------------|
| 222-2 | CH-1 HEADPHONES IN (X) |
| 222-1 | CH-2 HEADPHONES IN (X) |

221-3
221-2
221-1

| |
|---------------------------|
| CH-1 AUDIO HEADPHONES (X) |
| CH-2 AUDIO HEADPHONES (X) |
| AUDIO HEADPHONES (X) |

AU-127, 203-6
AU-127, 203-5

| | |
|-------|------------------------|
| 222-3 | MONITOR SELECT OUT (X) |
| 222-4 | MONITOR SELECT OUT (X) |

AU-127, 203-4
AU-127, 203-3
AU-127, 203-2
AU-127, 203-1

| | |
|-------|---------------------|
| 222-5 | CH-1 MONITOR IN (X) |
| 222-6 | CH-1 MONITOR IN (X) |
| 222-7 | CH-2 MONITOR IN (X) |
| 222-8 | CH-2 MONITOR IN (X) |

R1
22k

R2
22k

S1002
1-518-963-21
MONITOR OUT

CH-1

MIX

CH-2

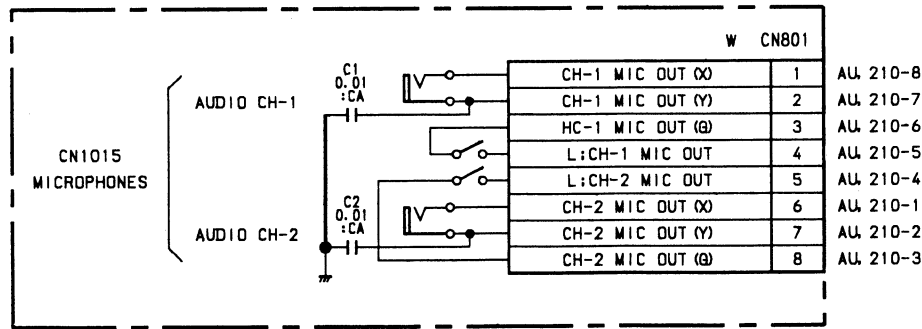
| | | |
|-----------------|-------|---------------|
| CH-1 REC VR IN | 224-1 | AU-127, 206-3 |
| CH-1 REC VR OUT | 224-2 | AU-127, 206-2 |
| CH-1 REC VR GND | 224-3 | AU-127, 206-1 |

RV1:CH-1 REC LEVEL

| | | |
|-----------------|-------|---------------|
| CH-2 REC VR GND | 224-4 | AU-127, 205-3 |
| CH-2 REC VR OUT | 224-5 | AU-127, 205-2 |
| CH-2 REC VR IN | 224-6 | AU-127, 205-1 |

RV2:CH-2 REC LEVEL

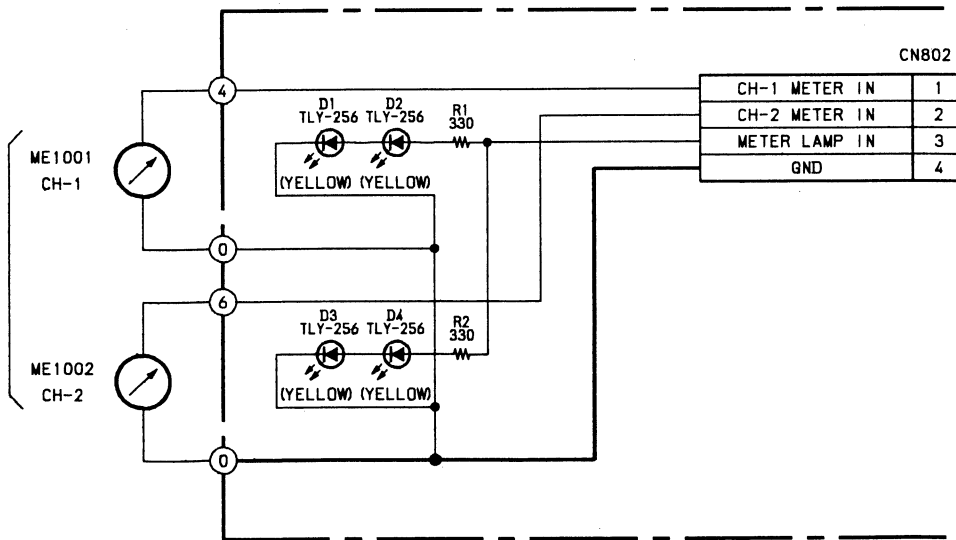
SW-346
I-631-793-11(1)
EVO-9800
EVO-9800P



MC-28
I-622-222-11(1)
EVO-9800
EVO-9800P

| | | |
|------------------|---|----------|
| CH-1 MIC OUT (X) | 1 | AU 210-8 |
| CH-1 MIC OUT (Y) | 2 | AU 210-7 |
| HC-1 MIC OUT (X) | 3 | AU 210-6 |
| L:CH-1 MIC OUT | 4 | AU 210-5 |
| L:CH-2 MIC OUT | 5 | AU 210-4 |
| CH-2 MIC OUT (X) | 6 | AU 210-1 |
| CH-2 MIC OUT (Y) | 7 | AU 210-2 |
| CH-2 MIC OUT (X) | 8 | AU 210-3 |

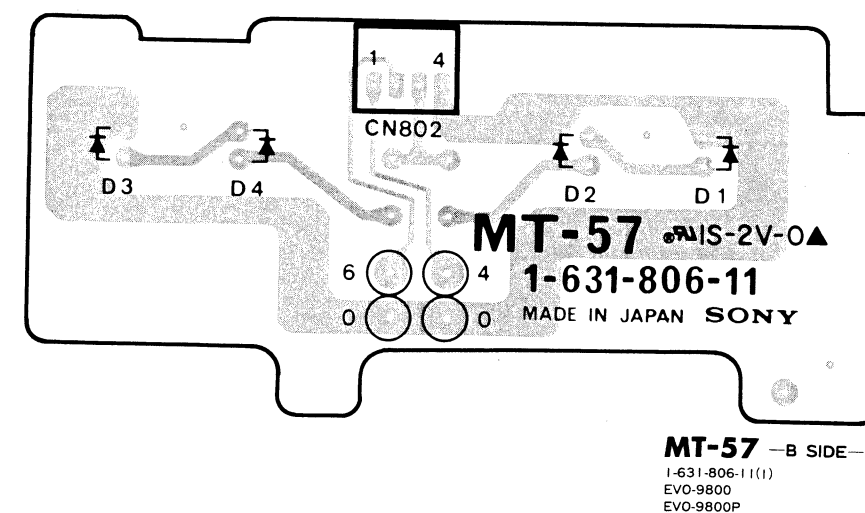
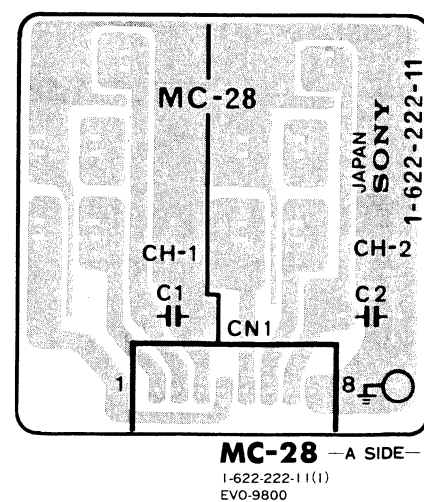
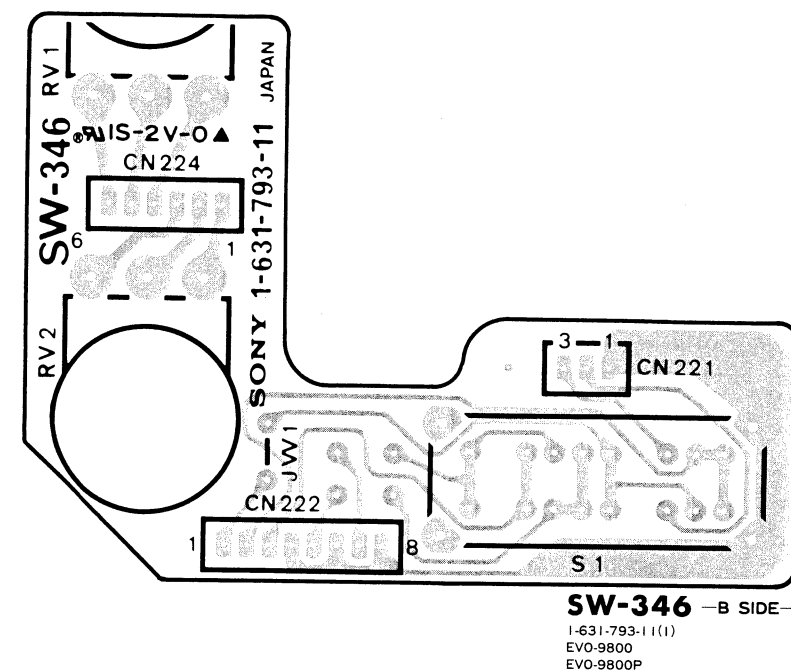
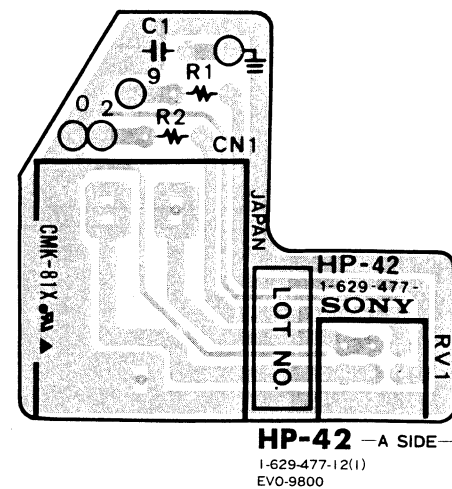
AUDIO
LEVEL



MT-57
I-631-806-11(1)
EVO-9800
EVO-9800P

| | | |
|---------------|---|----------|
| CH-1 METER IN | 1 | AU 207-4 |
| CH-2 METER IN | 2 | AU 207-3 |
| METER LAMP IN | 3 | AU 207-2 |
| GND | 4 | AU 207-1 |

HP-42; HEADPHONES LEVEL CONTROL
SW-346; AUDIO LEVEL CONTROL
MC-28; MICROPHONES JACK
MT-57; AUDIO LEVEL METER



A Side is the same as COMPONENT Side

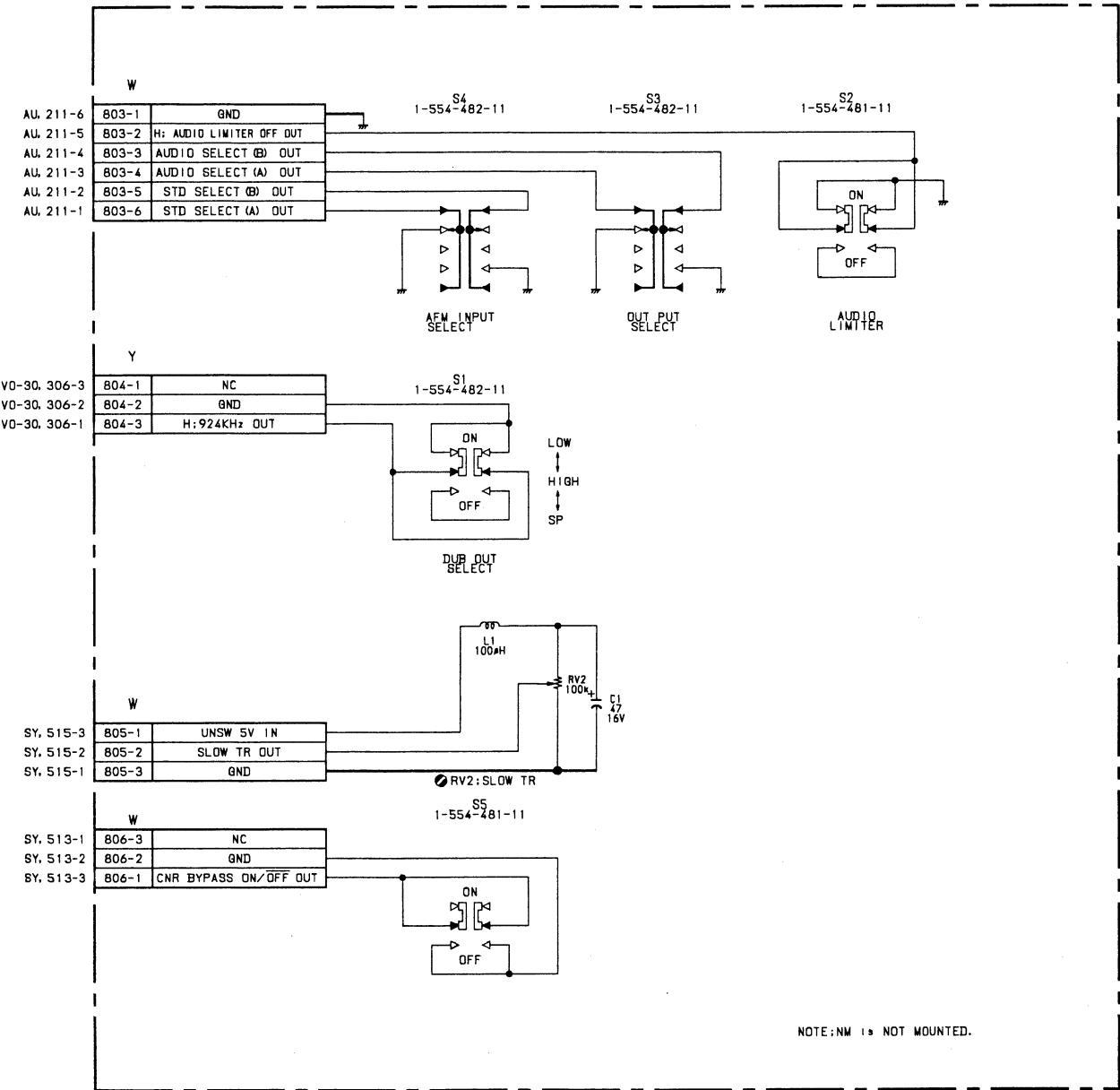
B Side is the same as SOLDER Side

SW-347A; AUDIO SELECT SWITCH

CP-141; CONNECTOR PANEL

SW.

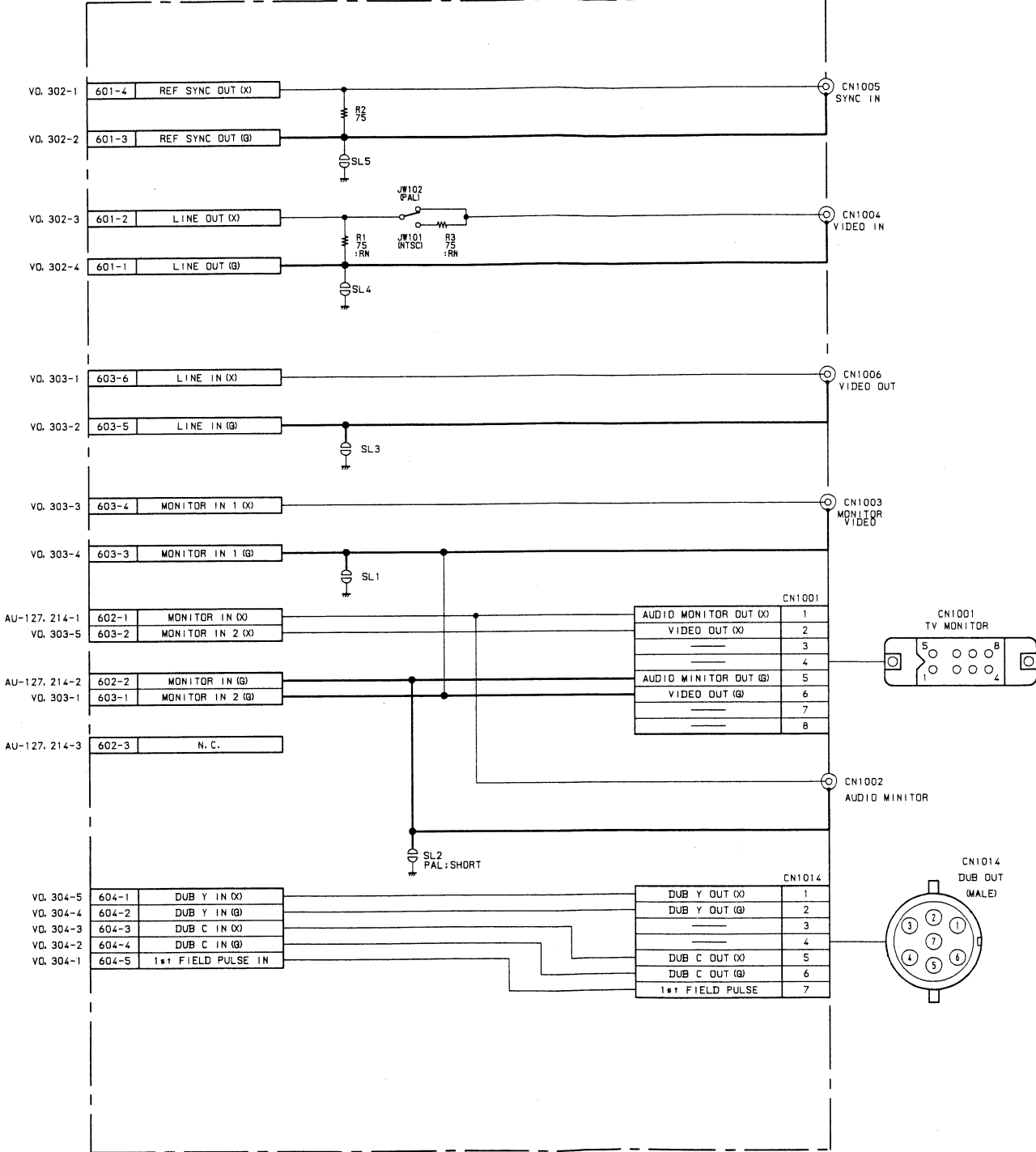
CP.



SW-347A

1-631-794-11(1)

EVO-9800P



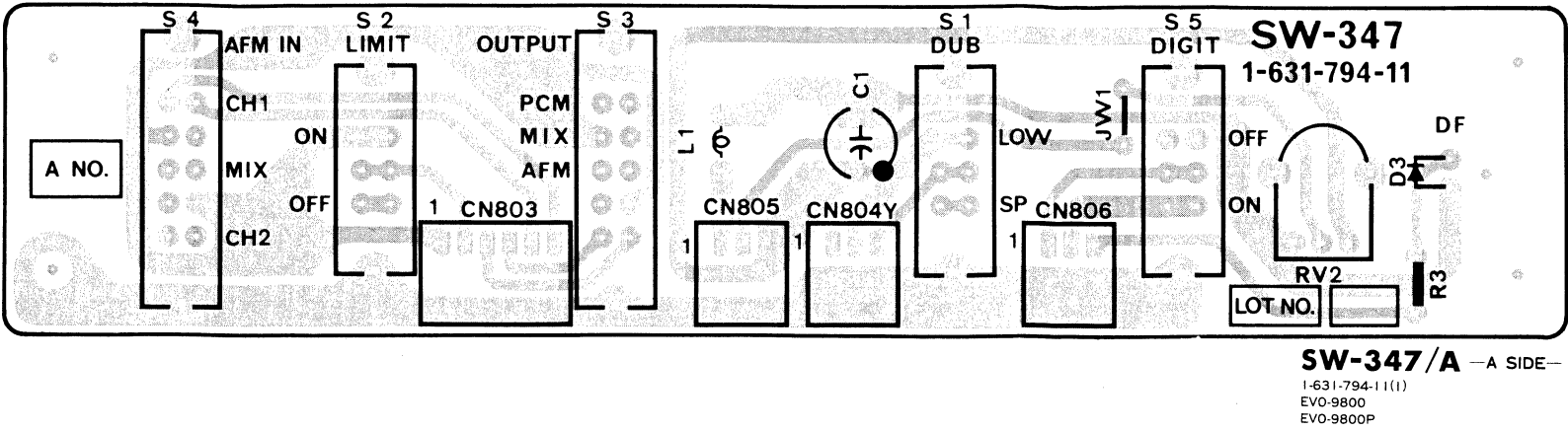
CP-141

1-631-807-12(1)

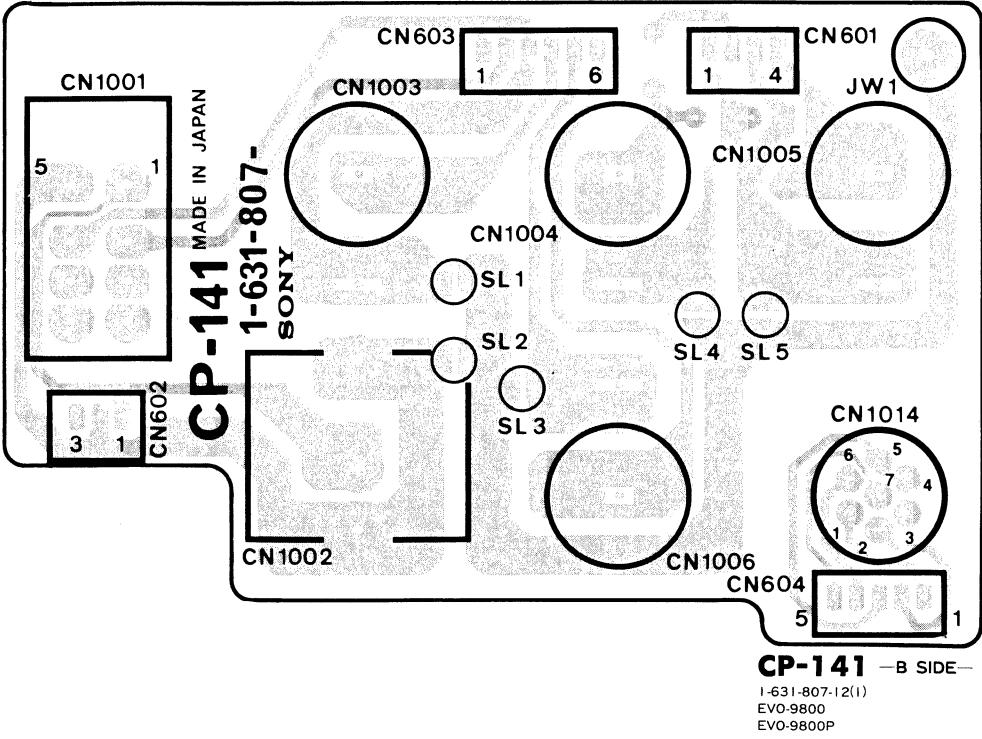
EVO-9800

EVO-9800P

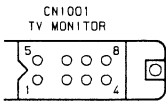
SW-347A; AUDIO SELECT SWITCH
CP-141; CONNECTOR PANEL



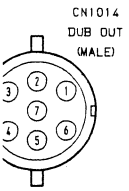
A Side is the same as COMPONENT Side

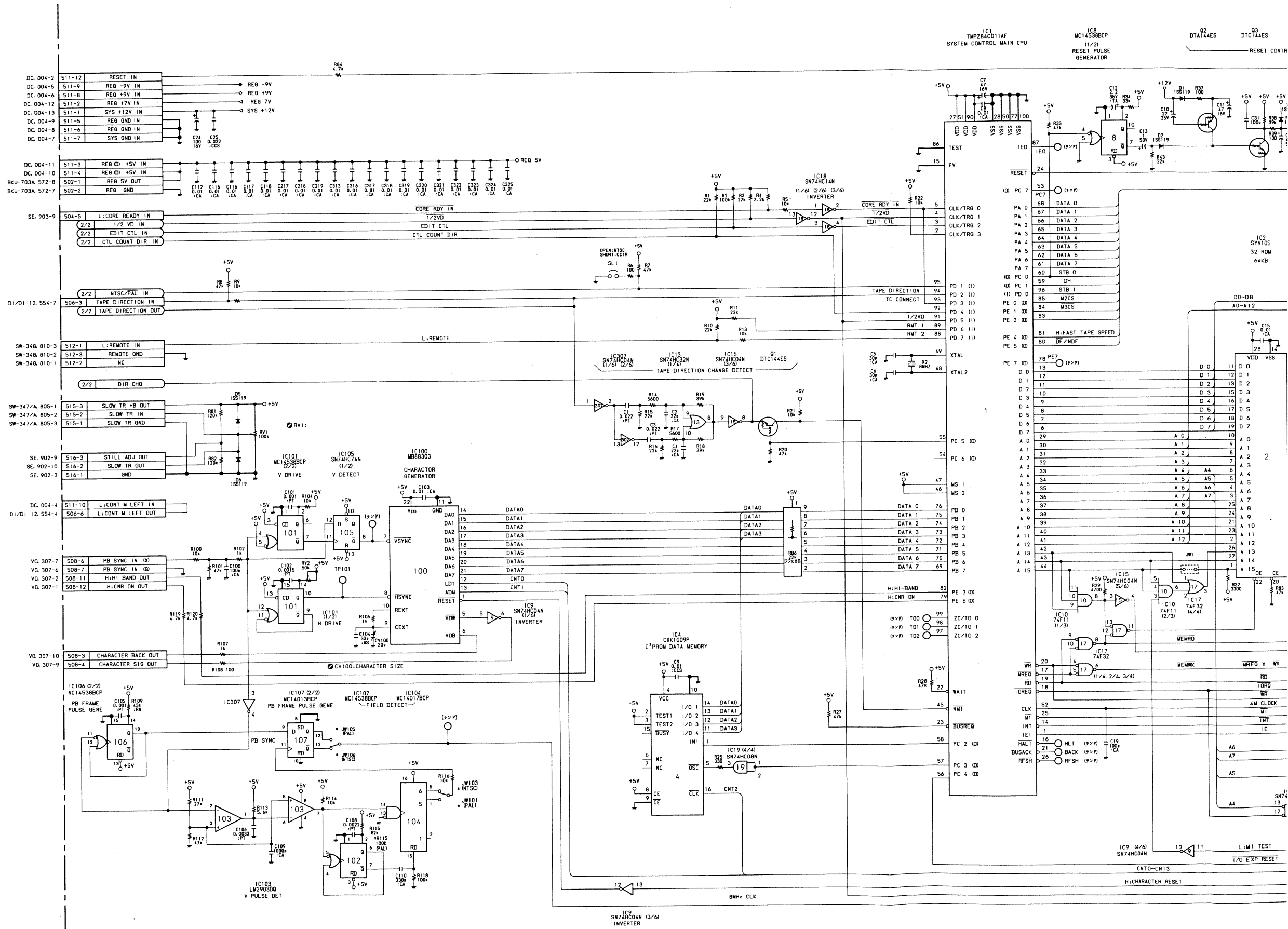


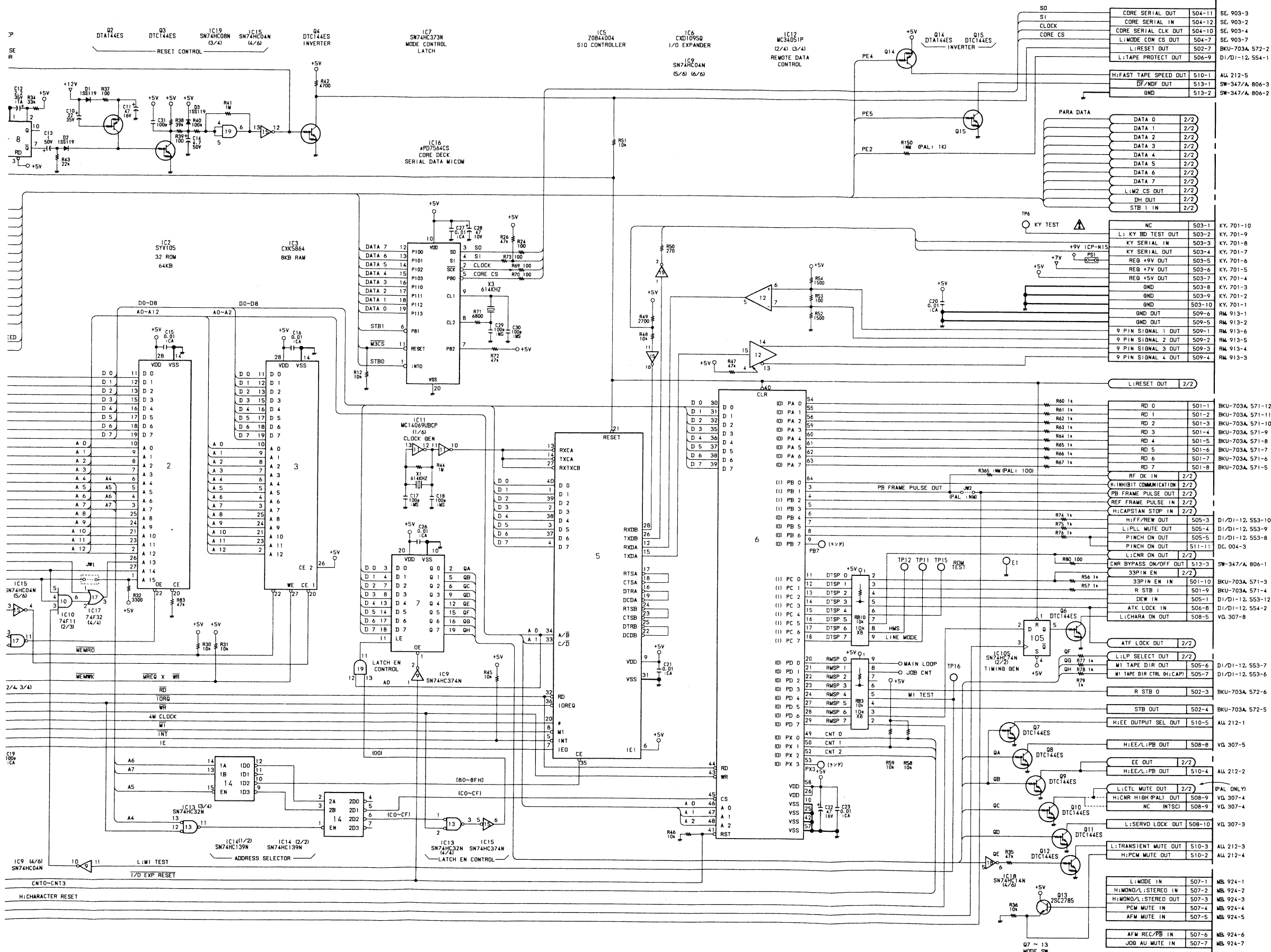
B Side is the same as SOLDER Side



ITOR





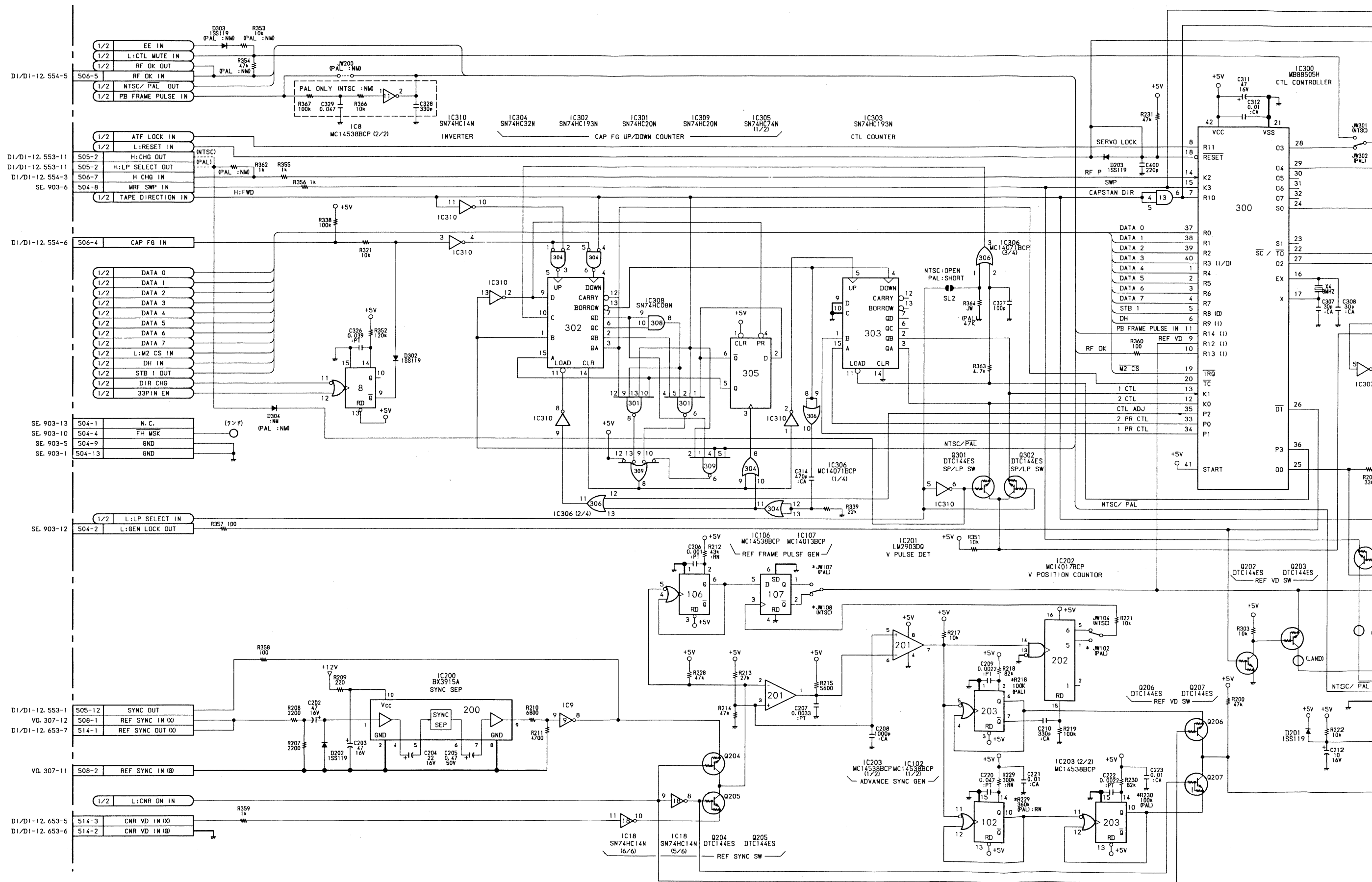


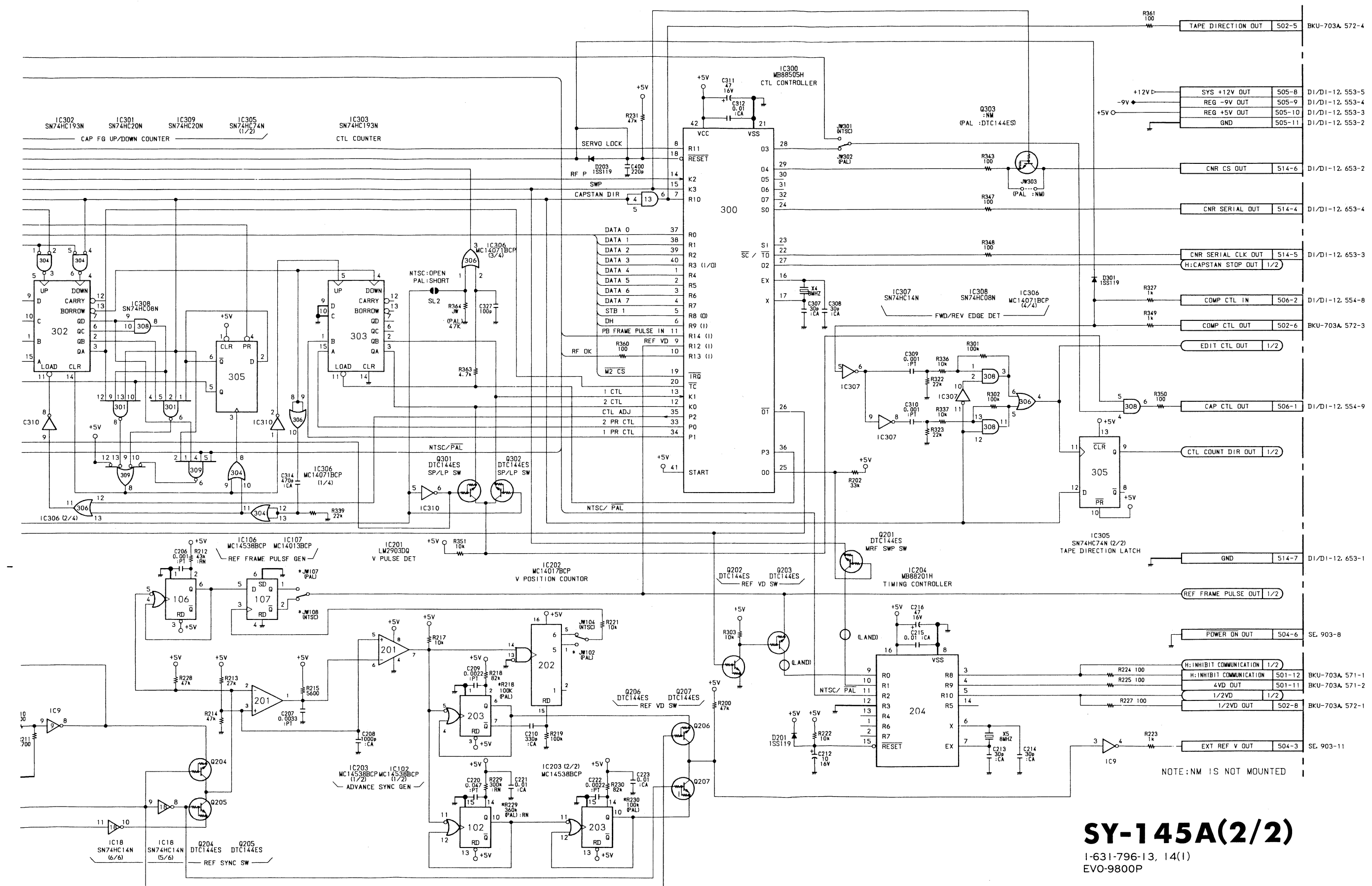
NOTE:
The Δ -marked components are critical to safety.
Replace only with same components as specified.

SY-145A(1/2)

I-631-796-13, 14(I)
EVO-9800P

SY-145A (2/2); CTL CONTROL

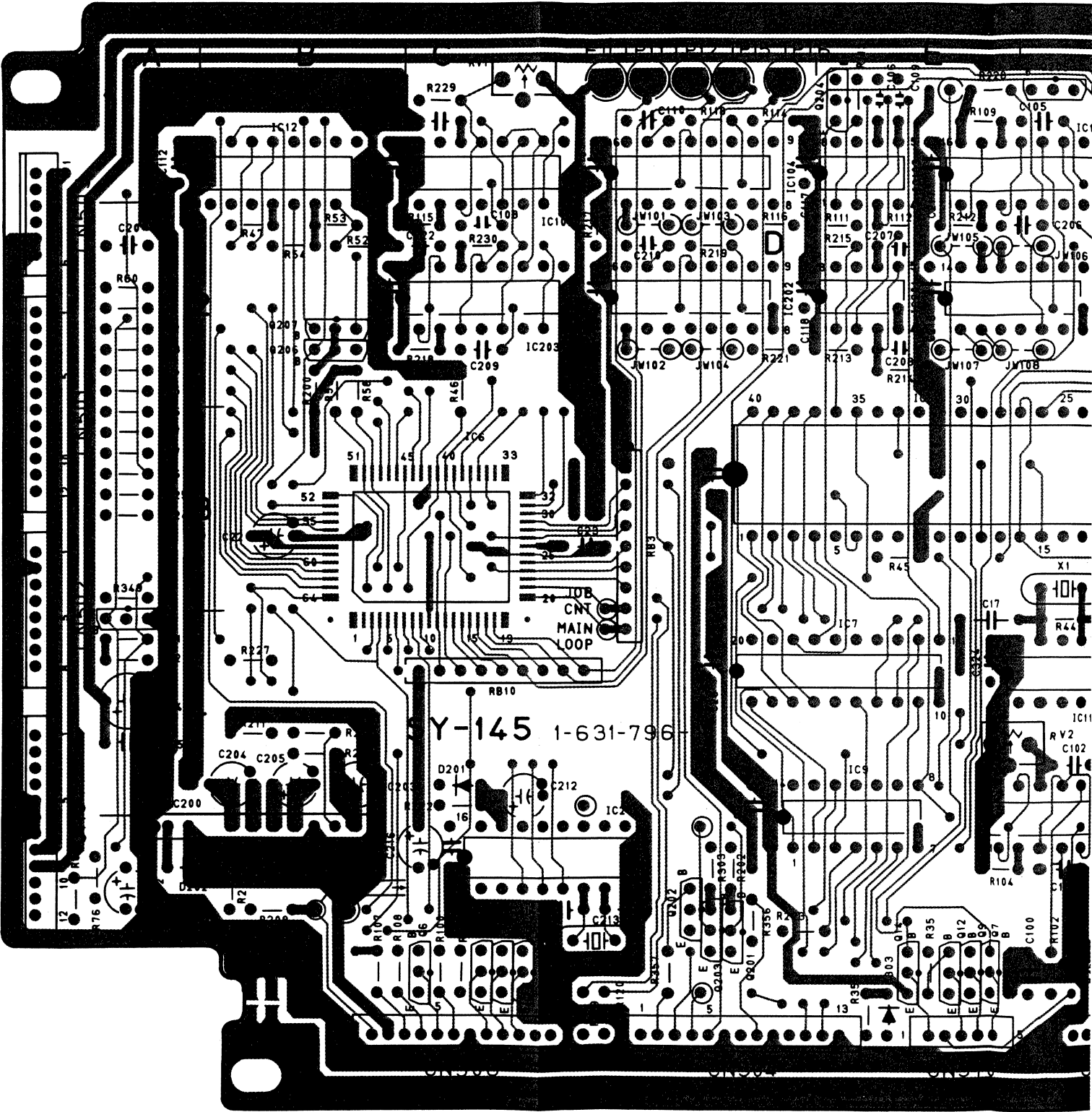


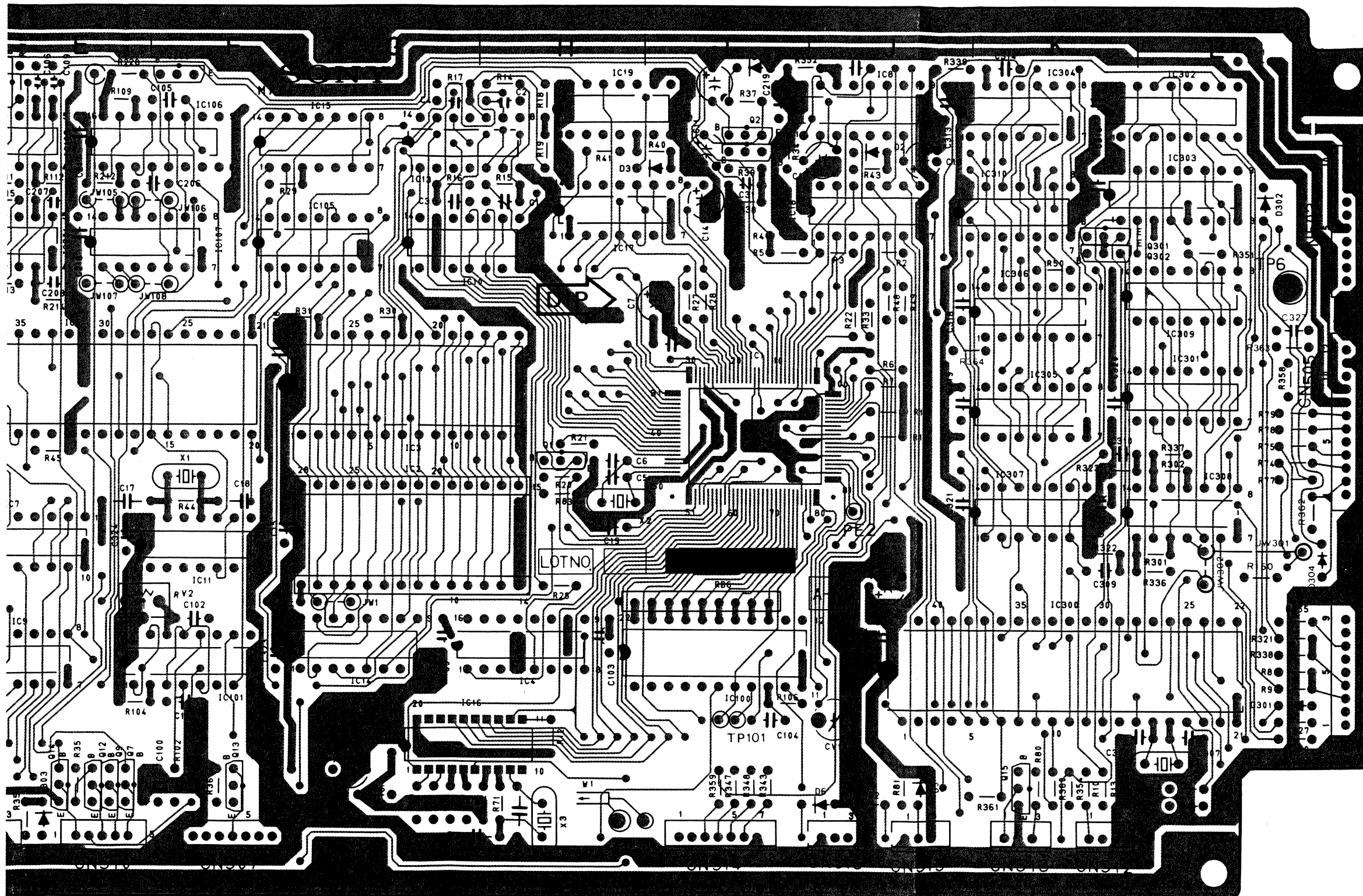


SY-145A; SYSTEM CONTROL

SY-145A(1-631-796-13, 14) A SIDE

| | | | | | |
|-------|-----|-------|-----|----|-----|
| CN12 | G-3 | IC106 | F-1 | X1 | F-3 |
| CN501 | A-3 | IC107 | F-2 | X2 | H-4 |
| CN502 | A-3 | IC200 | A-4 | X3 | H-5 |
| CN503 | L-2 | IC201 | E-2 | X4 | L-5 |
| CN504 | D-5 | IC202 | D-2 | X5 | C-5 |
| CN505 | L-3 | IC203 | C-2 | | |
| CN506 | L-4 | IC204 | D-4 | | |
| CN507 | F-5 | IC300 | K-4 | | |
| CN508 | C-5 | IC301 | L-3 | | |
| CN509 | A-2 | IC302 | L-1 | | |
| CN510 | E-5 | IC303 | L-1 | | |
| CN511 | A-4 | IC304 | K-1 | | |
| CN512 | K-5 | IC305 | K-3 | | |
| CN513 | K-5 | IC306 | K-2 | | |
| CN514 | I-5 | IC307 | K-3 | | |
| CN515 | J-5 | IC308 | L-3 | | |
| CN516 | J-5 | IC309 | L-3 | | |
| | | IC310 | K-2 | | |
| CV100 | J-5 | | | | |
| | | PS1 | L-1 | | |
| D1 | I-1 | | | | |
| D2 | J-1 | Q1 | H-3 | | |
| D3 | H-2 | Q2 | I-1 | | |
| D5 | J-5 | Q3 | I-1 | | |
| D6 | J-5 | Q4 | A-4 | | |
| D201 | C-4 | Q6 | C-5 | | |
| D202 | A-5 | Q7 | E-5 | | |
| D203 | L-5 | Q8 | C-5 | | |
| D301 | L-5 | Q9 | E-5 | | |
| D302 | L-2 | Q10 | C-5 | | |
| | | Q11 | C-5 | | |
| E1 | C-1 | Q12 | E-5 | | |
| | | Q13 | F-5 | | |
| IC1 | I-3 | Q14 | E-5 | | |
| IC2 | G-3 | Q15 | K-5 | | |
| IC3 | G-3 | Q201 | D-5 | | |
| IC4 | H-5 | Q202 | D-5 | | |
| IC5 | E-2 | Q203 | D-5 | | |
| IC6 | C-3 | Q204 | E-1 | | |
| IC7 | E-4 | Q205 | F-1 | | |
| IC8 | J-1 | Q206 | B-2 | | |
| IC9 | E-4 | Q207 | B-2 | | |
| IC10 | G-2 | Q301 | L-2 | | |
| IC11 | F-4 | Q302 | L-2 | | |
| IC12 | B-1 | | | | |
| IC13 | G-2 | RB3 | D-3 | | |
| IC14 | G-5 | RB6 | I-4 | | |
| IC15 | G-1 | RB10 | C-4 | | |
| IC16 | G-5 | | | | |
| IC17 | H-2 | RV1 | C-1 | | |
| IC18 | I-2 | RV2 | F-4 | | |
| IC19 | H-1 | | | | |
| IC100 | I-5 | TP6 | L-2 | | |
| IC101 | F-5 | TP11 | D-1 | | |
| IC102 | C-2 | TP12 | D-1 | | |
| IC103 | E-1 | TP15 | D-1 | | |
| IC104 | D-1 | TP16 | D-1 | | |
| IC105 | G-2 | TP101 | I-5 | | |





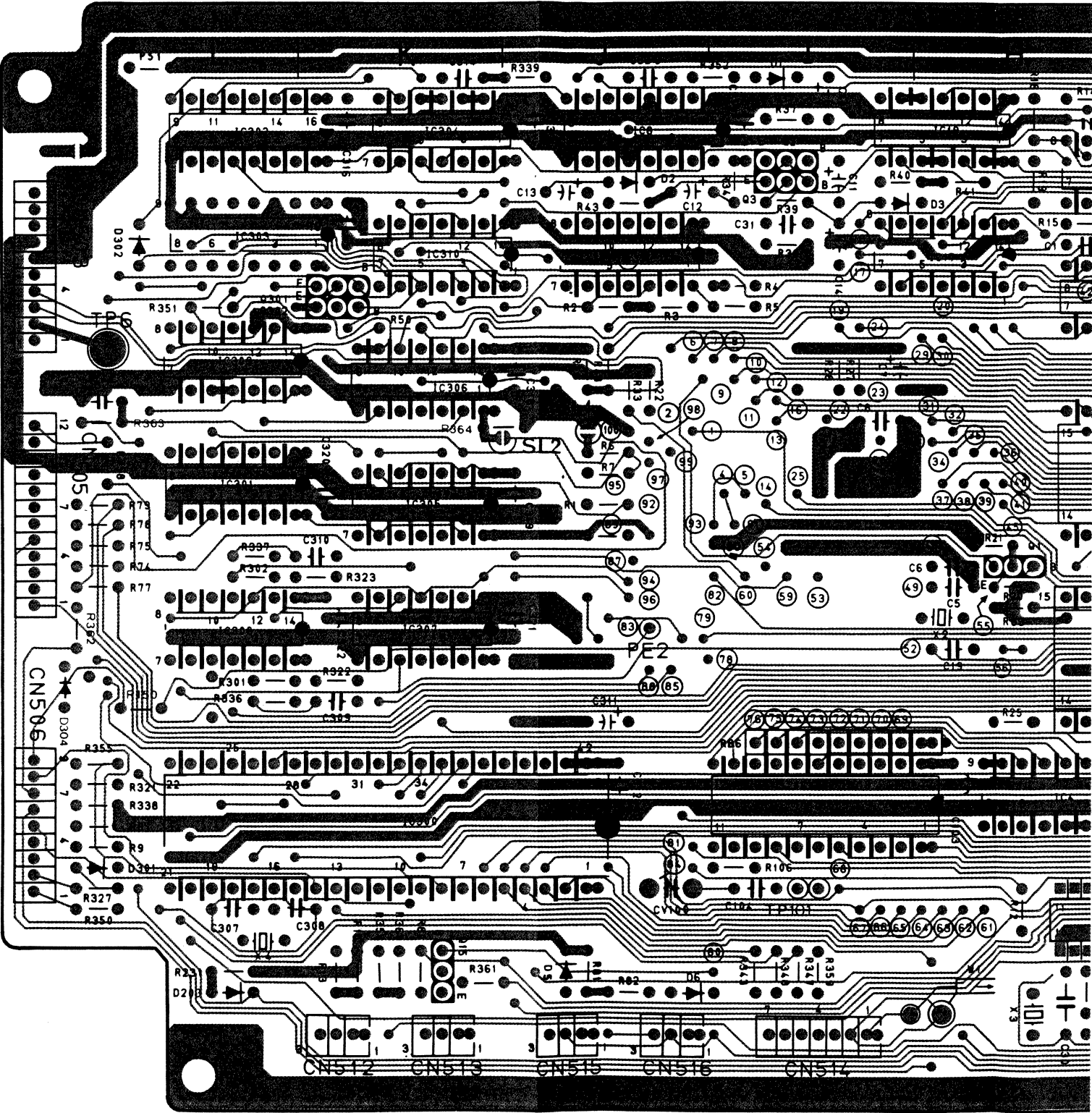
SY-145/A - A SIDE
1-631-796-13, 14(I)
EVO-9800P
EVO-9800P

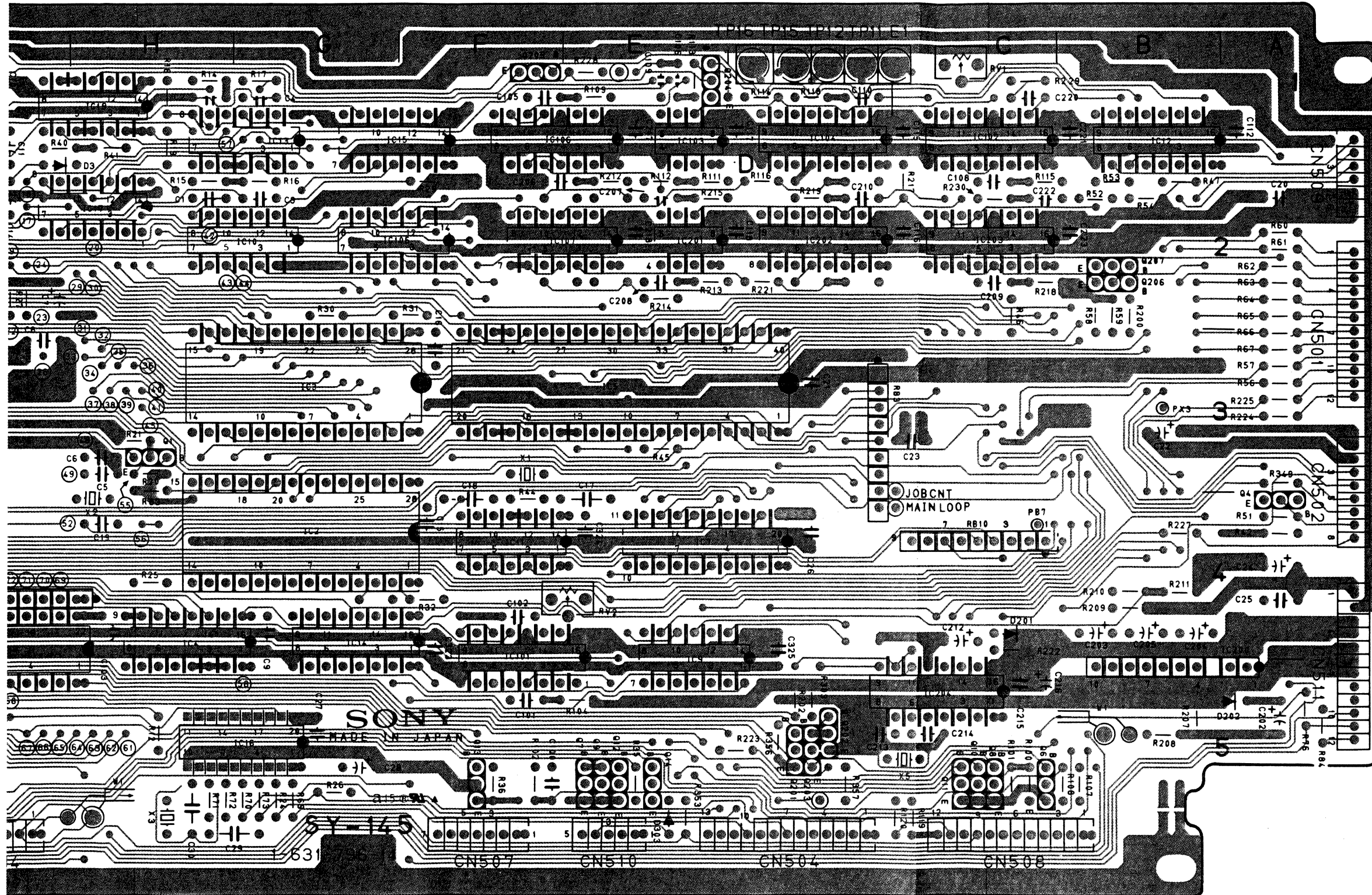
A Side is the same as COMPONENT Side

SY-145A; SYSTEM CONTROL

SY-145A(1-631-796-13, 14) B SIDE

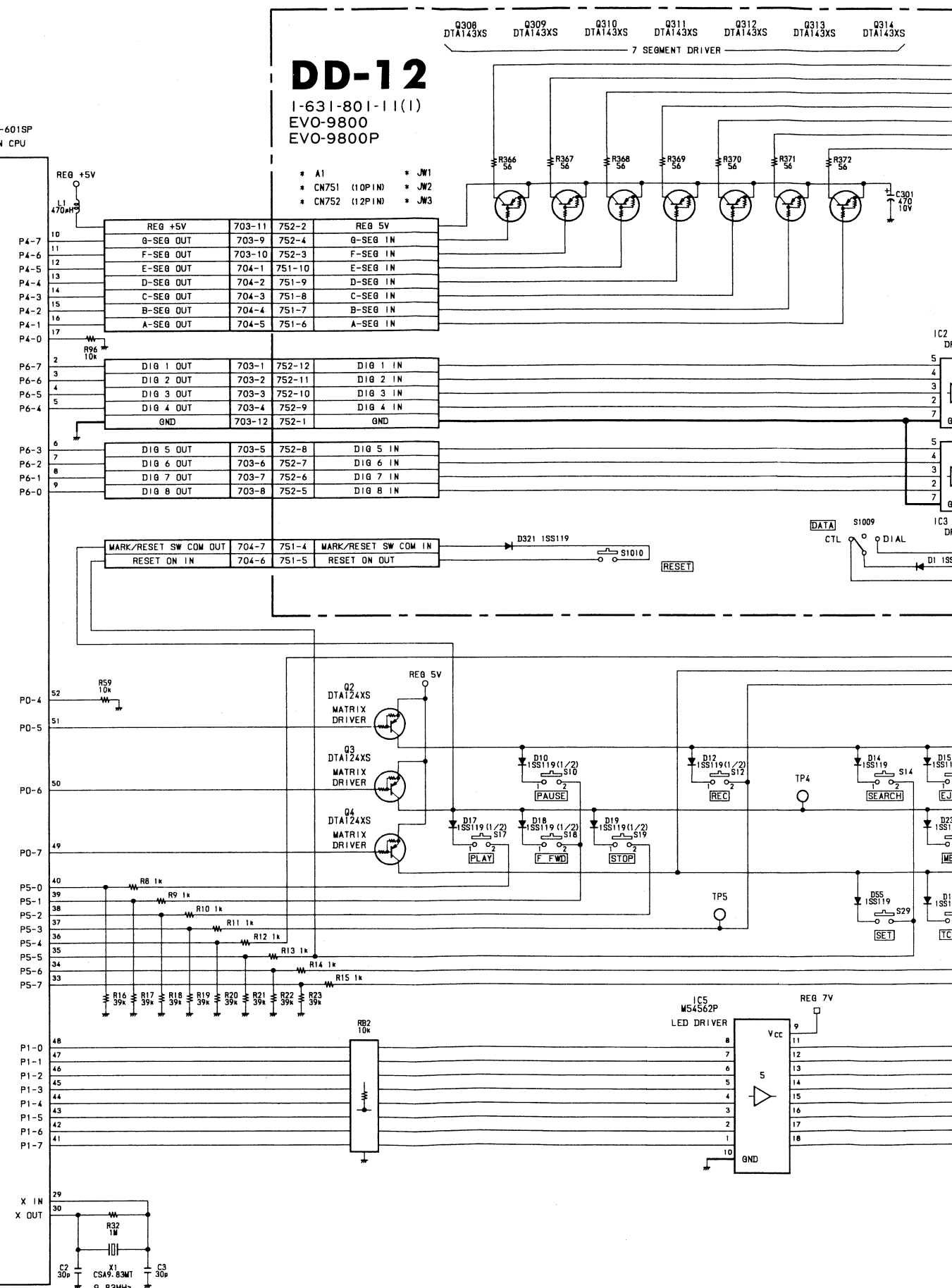
| | | | | | |
|-------|-----|-------|-----|----|-----|
| CNI2 | G-3 | IC106 | F-1 | X1 | F-3 |
| CN501 | A-3 | IC107 | F-2 | X2 | H-4 |
| CN502 | A-3 | IC200 | A-4 | X3 | H-5 |
| CN503 | L-2 | IC201 | E-2 | X4 | L-5 |
| CN504 | D-5 | IC202 | D-2 | X5 | C-5 |
| CN505 | L-3 | IC203 | C-2 | | |
| CN506 | L-4 | IC204 | D-4 | | |
| CN507 | F-5 | IC300 | K-4 | | |
| CN508 | C-5 | IC301 | L-3 | | |
| CN509 | A-2 | IC302 | L-1 | | |
| CN510 | E-5 | IC303 | L-1 | | |
| CN511 | A-4 | IC304 | K-1 | | |
| CN512 | K-5 | IC305 | K-3 | | |
| CN513 | K-5 | IC306 | K-2 | | |
| CN514 | I-5 | IC307 | K-3 | | |
| CN515 | J-5 | IC308 | L-3 | | |
| CN516 | J-5 | IC309 | L-3 | | |
| | | IC310 | K-2 | | |
| CV100 | J-5 | | | | |
| | | PS1 | L-1 | | |
| D1 | I-1 | | | | |
| D2 | J-1 | Q1 | H-3 | | |
| D3 | H-2 | Q2 | I-1 | | |
| D5 | J-5 | Q3 | I-1 | | |
| D6 | J-5 | Q4 | A-4 | | |
| D201 | C-4 | Q6 | C-5 | | |
| D202 | A-5 | Q7 | E-5 | | |
| D203 | L-5 | Q8 | C-5 | | |
| D301 | L-5 | Q9 | E-5 | | |
| D302 | L-2 | Q10 | C-5 | | |
| | | Q11 | C-5 | | |
| E1 | C-1 | Q12 | E-5 | | |
| | | Q13 | F-5 | | |
| IC1 | I-3 | Q14 | E-5 | | |
| IC2 | G-3 | Q15 | K-5 | | |
| IC3 | G-3 | Q201 | D-5 | | |
| IC4 | H-5 | Q202 | D-5 | | |
| IC5 | E-2 | Q203 | D-5 | | |
| IC6 | C-3 | Q204 | E-1 | | |
| IC7 | E-4 | Q205 | F-1 | | |
| IC8 | J-1 | Q206 | B-2 | | |
| IC9 | E-4 | Q207 | B-2 | | |
| IC10 | G-2 | Q301 | L-2 | | |
| IC11 | F-4 | Q302 | L-2 | | |
| IC12 | B-1 | | | | |
| IC13 | G-2 | RB3 | D-3 | | |
| IC14 | G-5 | RB6 | I-4 | | |
| IC15 | G-1 | RB10 | C-4 | | |
| IC16 | G-5 | | | | |
| IC17 | H-2 | RV1 | C-1 | | |
| IC18 | I-2 | RV2 | F-4 | | |
| IC19 | H-1 | | | | |
| IC100 | I-5 | TP6 | L-2 | | |
| IC101 | F-5 | TP11 | D-1 | | |
| IC102 | C-2 | TP12 | D-1 | | |
| IC103 | E-1 | TP15 | D-1 | | |
| IC104 | D-1 | TP16 | D-1 | | |
| IC105 | G-2 | TP101 | I-5 | | |

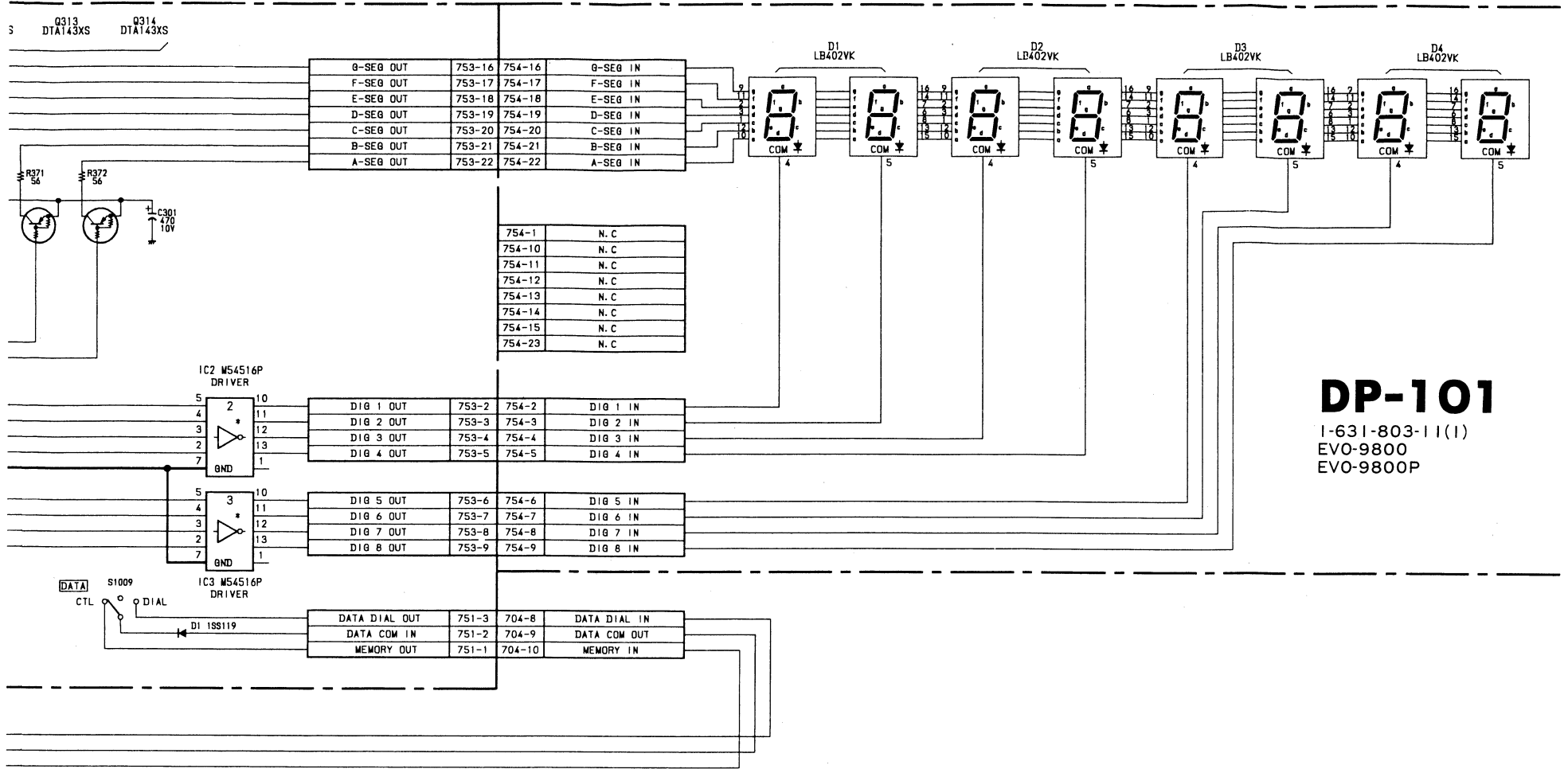




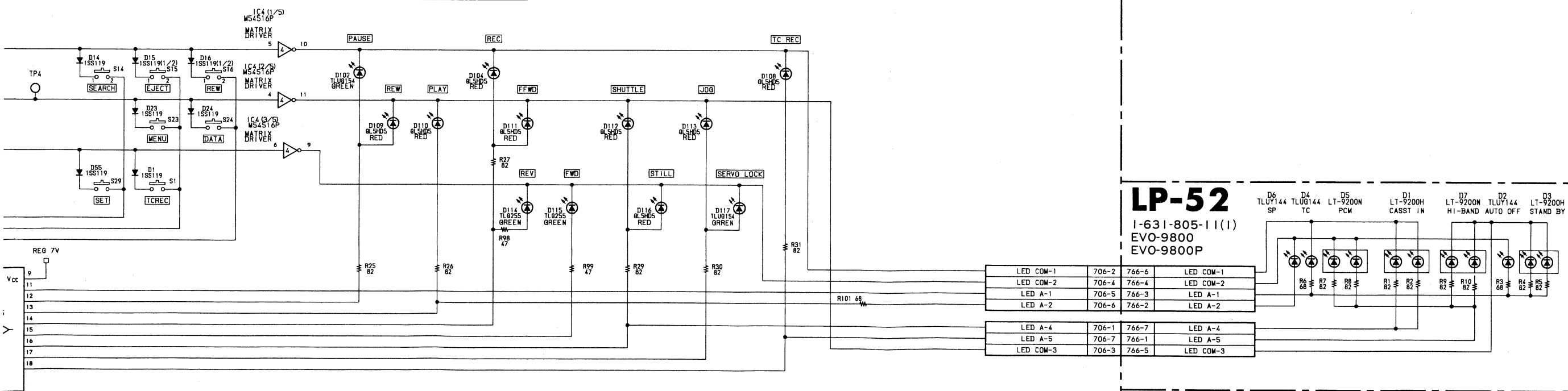
SY-145/A - B SIDE
1-631-796-13, 14(I)
EVO-9800
EVO-9800P

B Side is the same as SOLDER Side





NOTE:
The Δ -marked components are critical to safety.
Replace only with same components as specified.



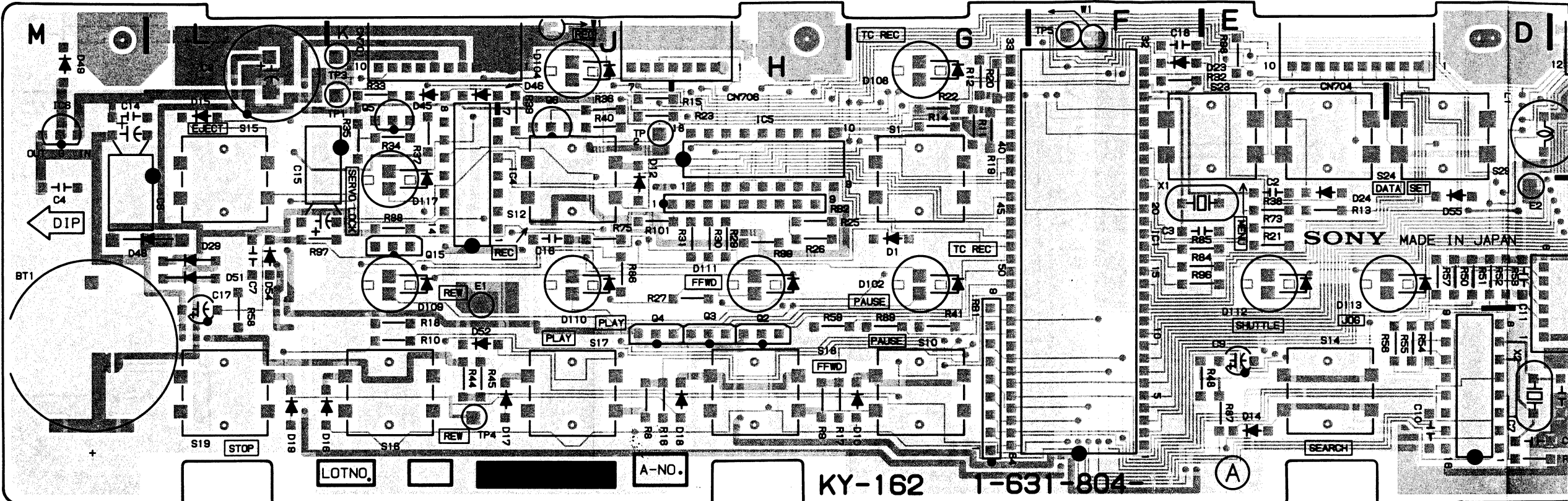
KY-162
I-631-804-12(1)
EVO-9800
EVO-9800P

| REF NO | TYPE | QND | +5V | PACKAGE |
|--------|---------------|-----|-----|-----------|
| IC1 | M50747-601SP | 32 | 1 | 14PIN DIP |
| IC2 | M54516P | 7 | | 14PIN DIP |
| IC3 | M54516P | 7 | | 14PIN DIP |
| IC4 | M54516P | 7 | | 14PIN DIP |
| IC5 | M54562P | 10 | | 18PIN DIP |
| IC6 | *PC78M05H | 3 | | |
| IC7 | MB88201H-539N | 8 | 16 | 16PIN DIP |

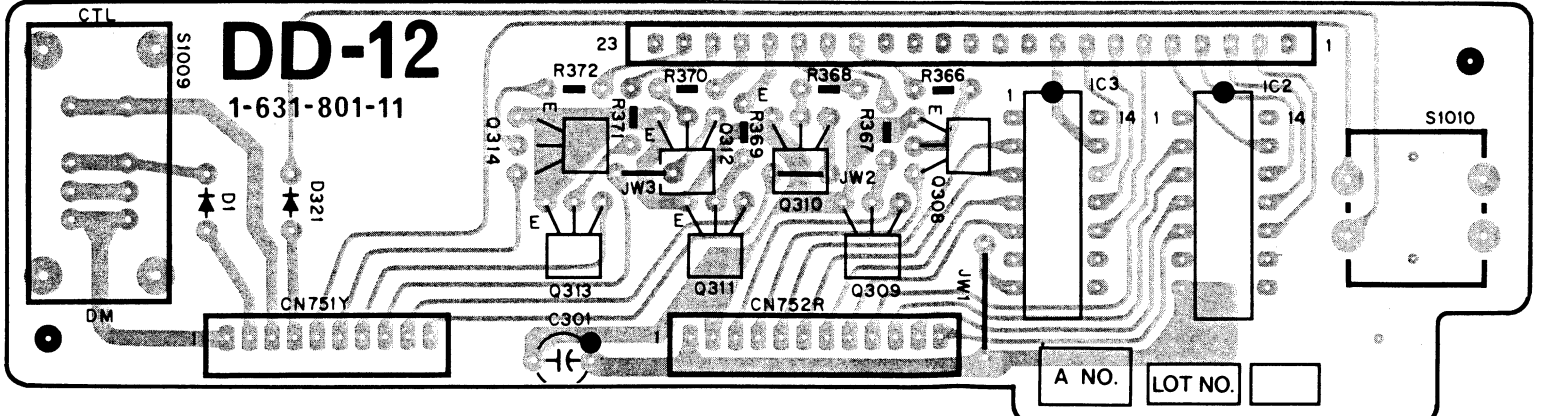
KY-162; FUNCTION KEY BOARD
DD-12; DISPLAY DRIVE
DP-101; DISPLAY
LP-52; MODE DISPLAY

KY-162(1-631-804-12) A SIDE

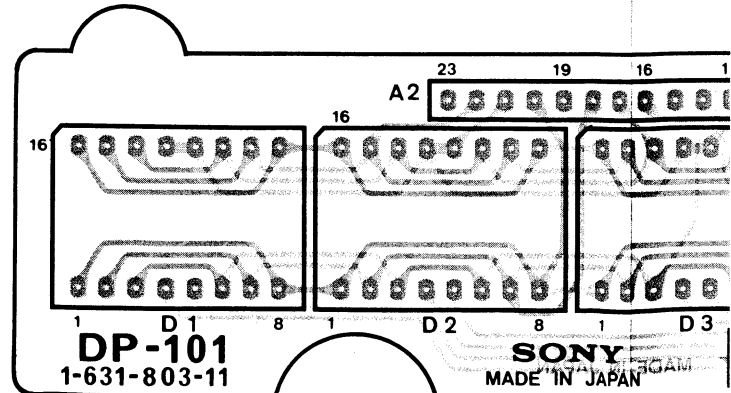
| | | | |
|-------|-----|-----|-----|
| BT1 | M-2 | RB2 | H-2 |
| CN701 | K-1 | S1 | G-1 |
| CN702 | C-2 | S10 | G-3 |
| CN703 | C-1 | S12 | J-2 |
| CN704 | E-1 | S14 | E-3 |
| CN706 | H-1 | S15 | L-1 |
| | | S16 | K-3 |
| D1 | G-2 | S17 | J-3 |
| D10 | G-3 | S18 | H-3 |
| D12 | J-1 | S19 | L-3 |
| D14 | E-3 | S23 | E-1 |
| D15 | L-1 | S24 | D-1 |
| D16 | L-3 | S29 | D-1 |
| D17 | J-3 | | |
| D18 | H-3 | TP1 | K-1 |
| D19 | L-3 | TP2 | J-1 |
| D23 | E-1 | TP3 | K-1 |
| D24 | E-2 | TP4 | K-3 |
| D29 | L-2 | TP5 | F-1 |
| D45 | K-1 | | |
| D46 | J-1 | X1 | F-2 |
| D48 | M-2 | X2 | D-3 |
| D49 | M-1 | | |
| D51 | L-2 | | |
| D52 | K-3 | | |
| D54 | L-2 | | |
| D55 | D-2 | | |
| D102 | G-2 | | |
| D104 | J-1 | | |
| D108 | G-1 | | |
| D109 | K-2 | | |
| D110 | J-3 | | |
| D111 | H-2 | | |
| D112 | E-3 | | |
| D113 | E-2 | | |
| D114 | B-1 | | |
| D115 | A-1 | | |
| D116 | B-1 | | |
| D117 | K-2 | | |
| E1 | K-2 | | |
| E2 | D-2 | | |
| IC1 | F-2 | | |
| IC4 | J-1 | | |
| IC5 | H-1 | | |
| IC6 | M-1 | | |
| IC7 | D-3 | | |
| Q2 | H-3 | | |
| Q3 | H-3 | | |
| Q4 | J-3 | | |
| Q5 | K-1 | | |
| Q6 | J-1 | | |
| Q15 | K-2 | | |
| RB1 | G-2 | | |



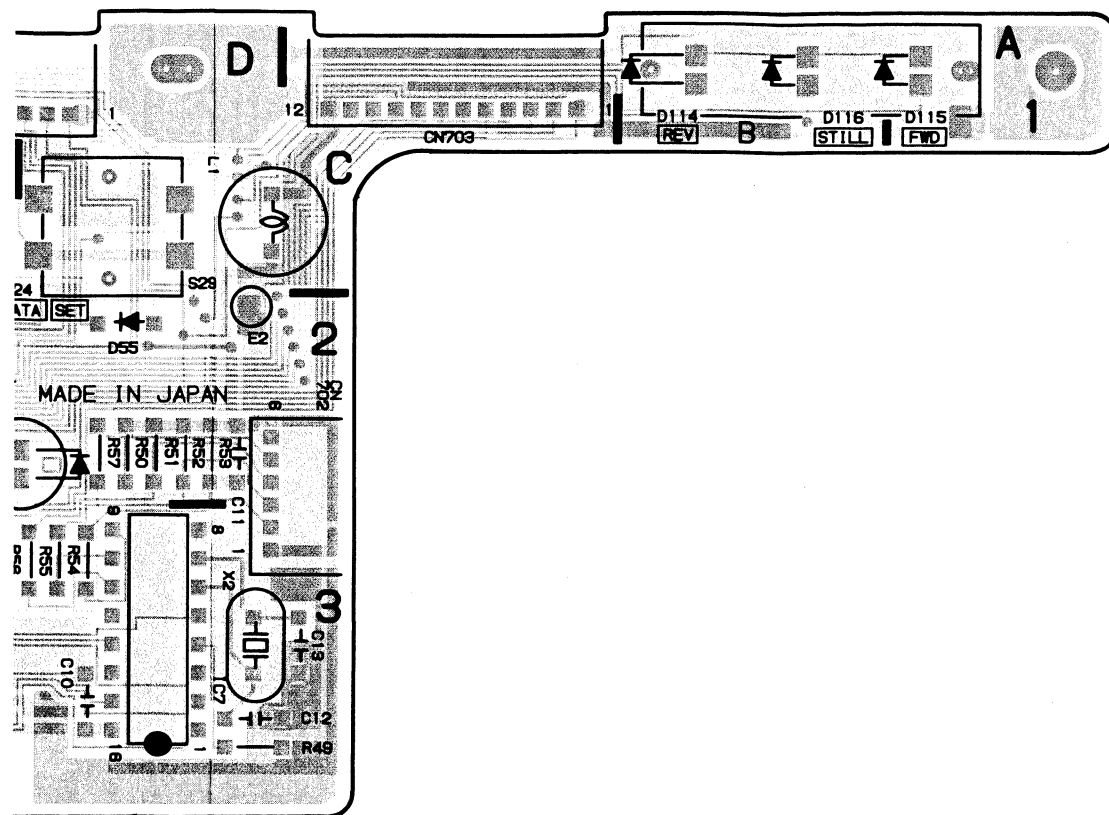
KY-162 —A SIDE
1-631-804-12(1)
EVO-9800



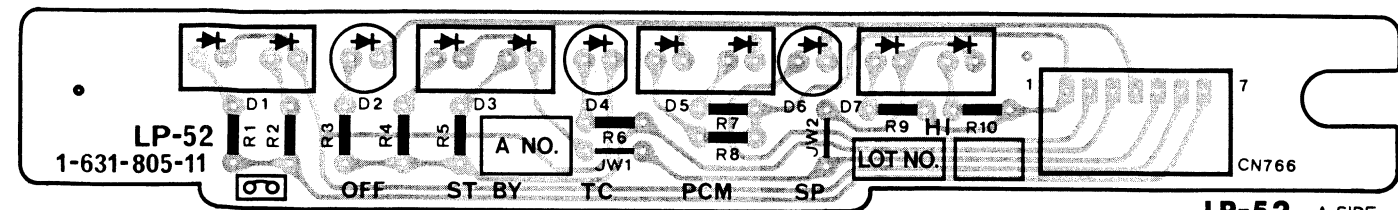
DD-12 —A SIDE—
1-631-801-11(1)
EVO-9800



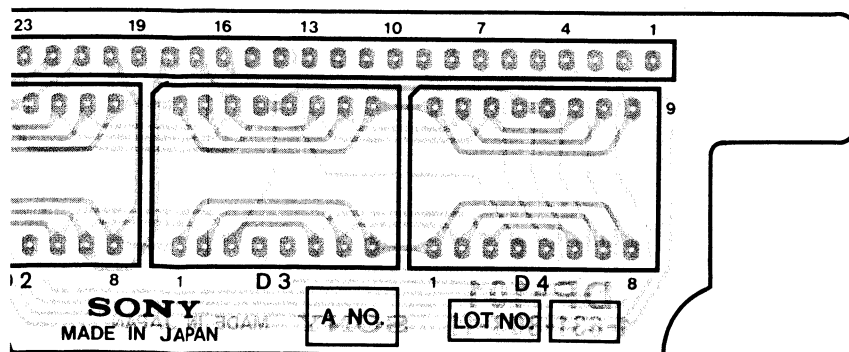
A Side is the same as COMPONENT Side



KY-162 —A SIDE—
1-631-804-12(1)
EVO-9800



LP-52 —A SIDE—
1-631-805-11(1)
EVO-9800



DP-101 —A SIDE—
1-631-803-11(1)
EVO-9800

A

B

C

D

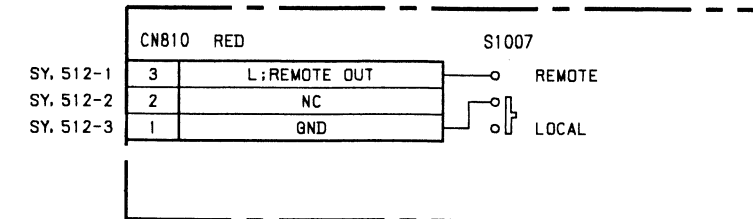
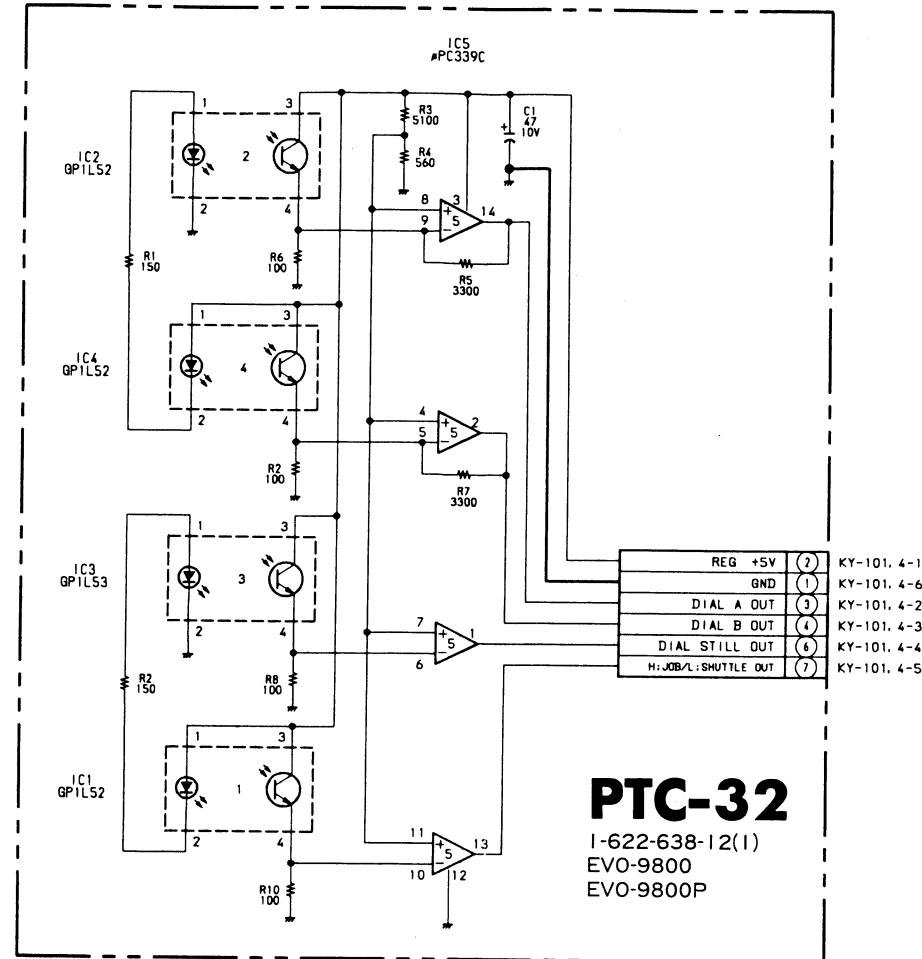
E

F

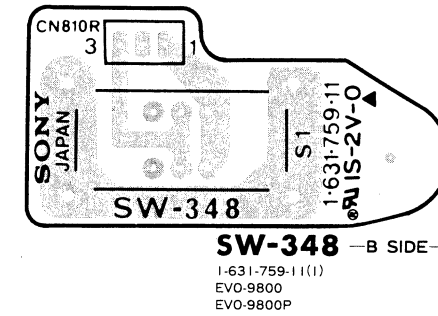
G

H

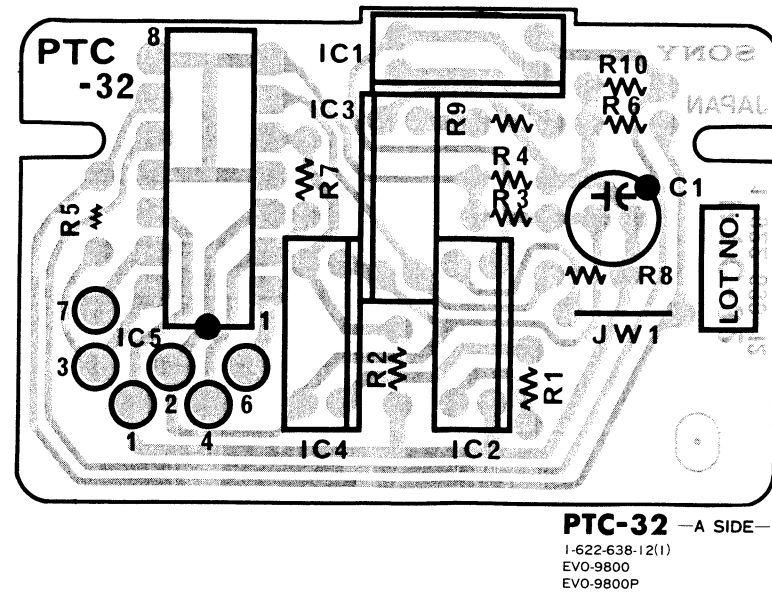
I



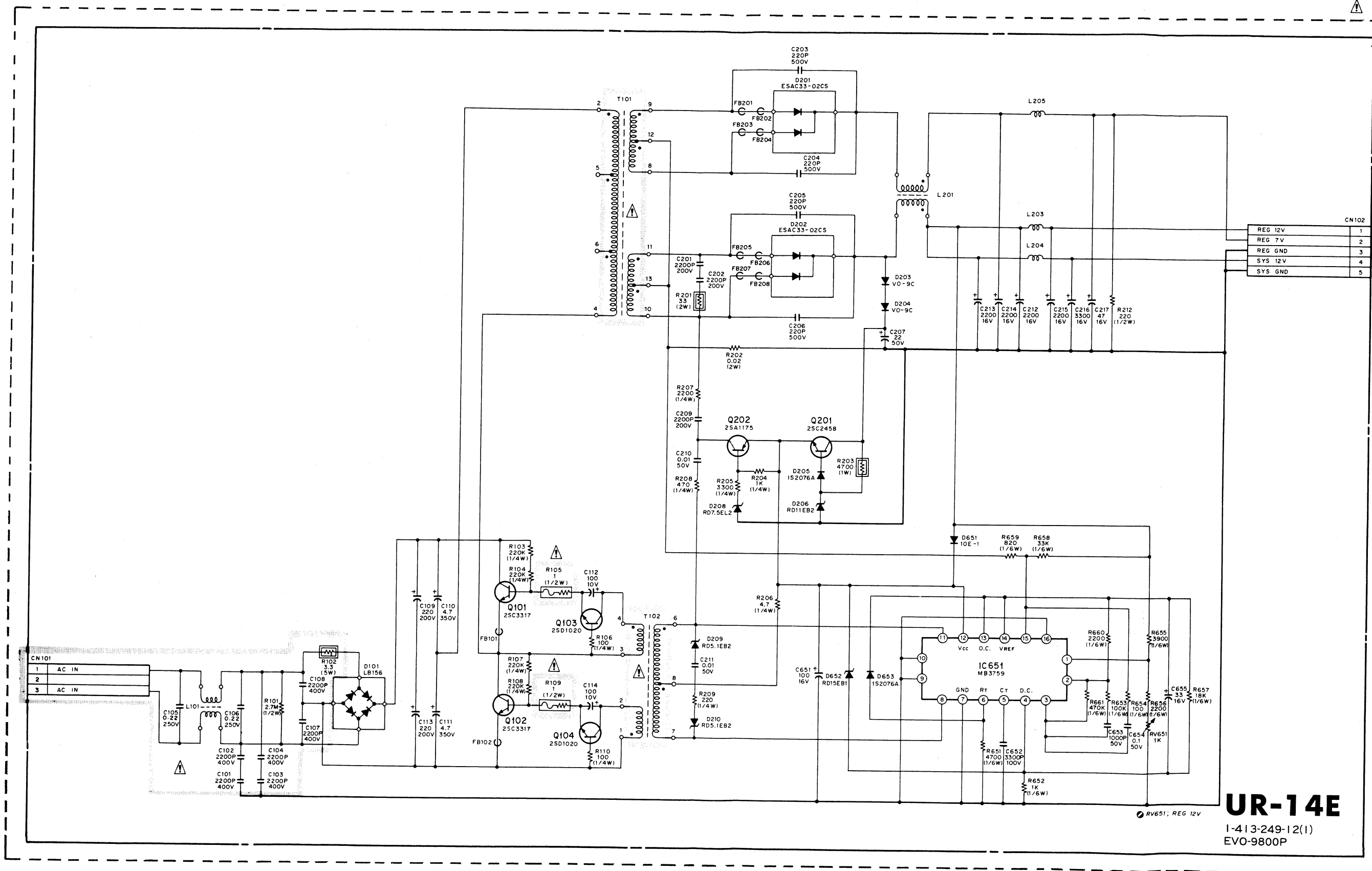
SW-348
I-631-759-11(1)
EVO-9800
EVO-9800P



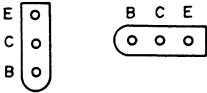
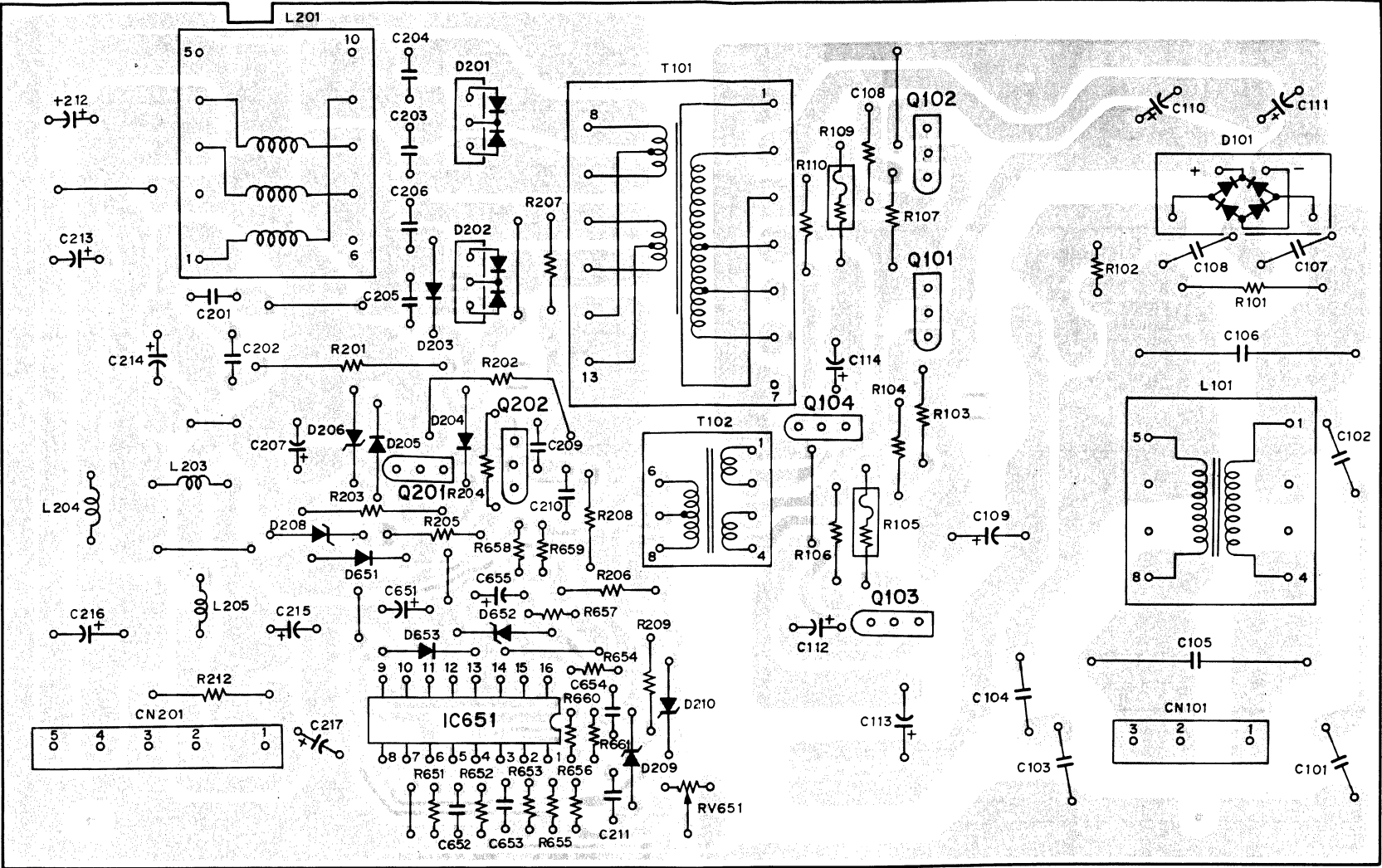
B Side is the same as SOLDER Side



A Side is the same as COMPONENT Side



UR-14E; SWITCHING REGULATOR



UR-14E -B SIDE-
1-413-249-12(1)
EVO-9800P

B Side is the same as SOLDER Side

CN1 A-3
CN2 A-2
CN3 F-1
CN4 F-4
CN5 F-2
CN6 F-3
CN7 A-4

CP1 B-3

D1 B-2
D2 E-4
D3 E-4
D4 E-3
D5 E-3

E1 E-1S
E2 B-1S

F2 D-3

PS1 D-4
PS3 E-2
PS4 F-3
PS5 C-4

IC1 D-1
IC2 D-1
IC3 F-2

Q1 C-3
Q2 E-1
Q3 F-4
Q4 F-4
Q5 F-4
Q6 C-1
Q7 F-2

RV1 F-1

TP1 B-1S
TP2 F-1S
TP3 C-1S
TP4 F-1S
TP5 B-1S
TP6 F-1S
TP7 C-1S
TP8 E-1S

S: B SIDE (SOLDERING)

NOTE) *...for PAL model

NTSC/PAL

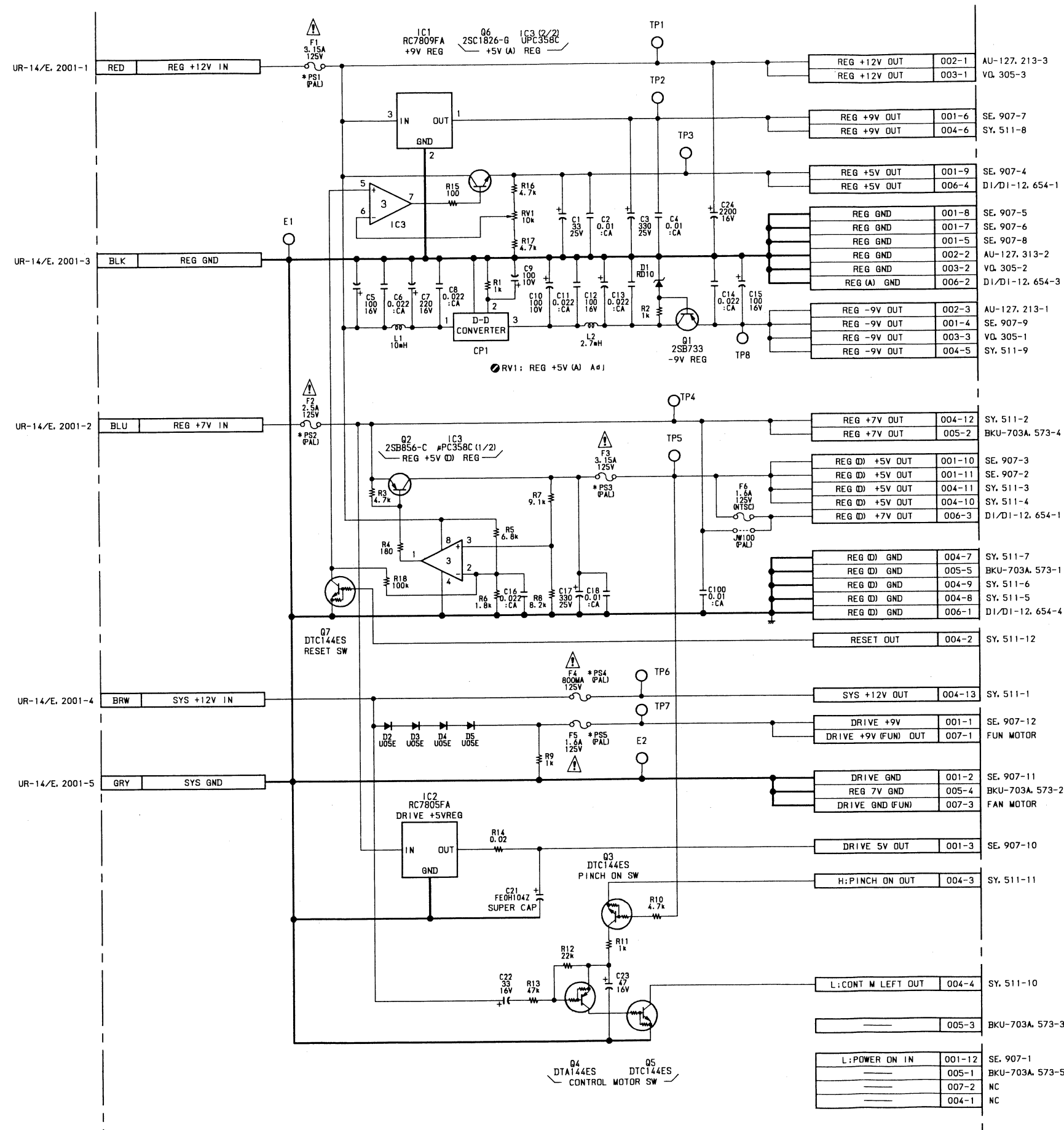
| NTSC REF. | NTSC P No. | PAL REF. | PAL P No. |
|-----------|--------------|----------|--------------|
| F1 | 1-532-781-21 | PS1 | 1-532-844-21 |
| F2 | 1-532-701-11 | PS2 | 1-532-286-11 |
| F3 | 1-532-781-21 | PS3 | 1-532-844-21 |
| F4 | 1-532-775-21 | PS4 | 1-532-838-21 |
| F5 | 1-532-778-21 | PS5 | 1-532-841-21 |
| F6 | 1-532-778-21 | | :NM |

NOTE) Mount JW100
only PAL model.

NOTE:
The Δ -marked components are critical to safety.
Replace only with same components as specified.

DC-45A

1-631-800-21(1)
EVO-9800P



DC-45A; DC SUPPLY

DC-45A(1-631-800-21) A SIDE

- CN1

A-3
- CN2

A-2
- CN3

F-1
- CN4

F-4
- CN5

F-2
- CN6

F-3
- CN7

A-4
- CP1

B-3
- D1

B-2
- D2

E-4
- D3

E-4
- D4

E-3
- D5

E-3
- E1

E-1S
- E2

B-1S
- F2

D-3
- PS1

D-4
- PS3

E-2
- PS4

F-3
- PS5

C-4
- IC1

D-1
- IC2

D-1
- IC3

F-2
- Q1

C-3
- Q2

E-1
- Q3

F-4
- Q4

F-4
- Q5

F-4
- Q6

C-1
- Q7

F-2
- RV1

F-1
- TP1

B-1S
- TP2

F-1S
- TP3

C-1S
- TP4

F-1S
- TP5

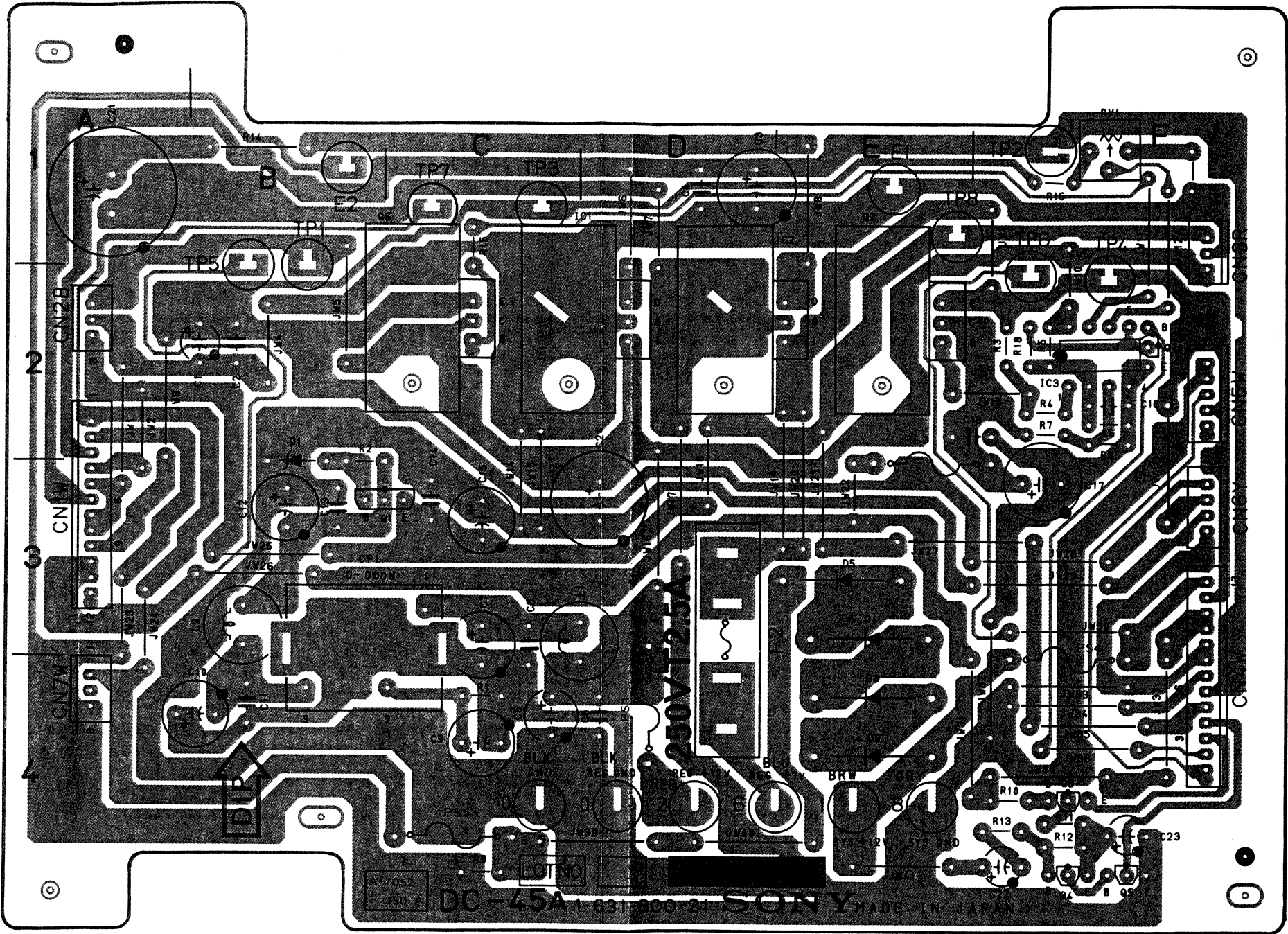
B-1S
- TP6

F-1S
- TP7

C-1S
- TP8

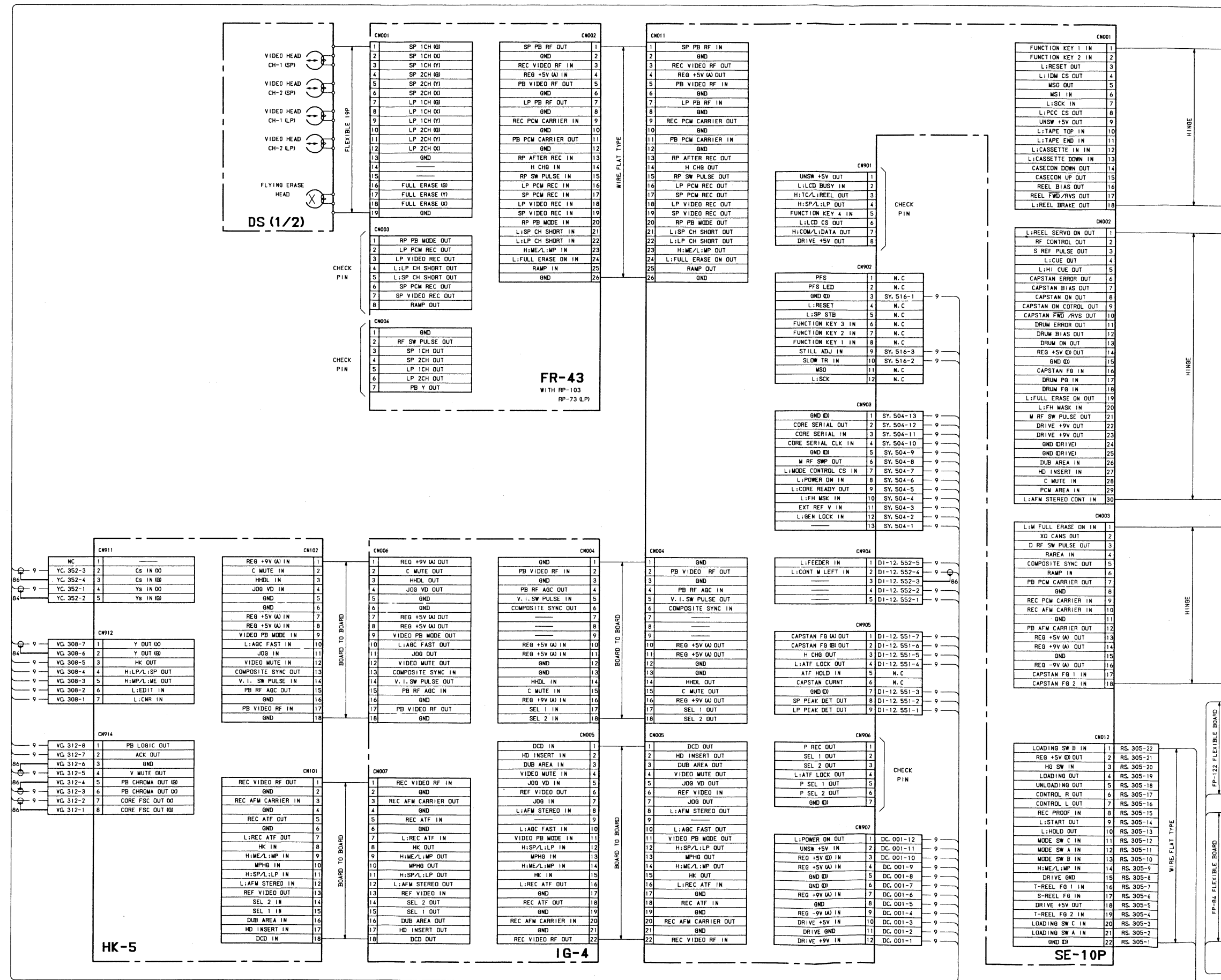
E-1S

S: B SIDE (SOLDERING SIDE)

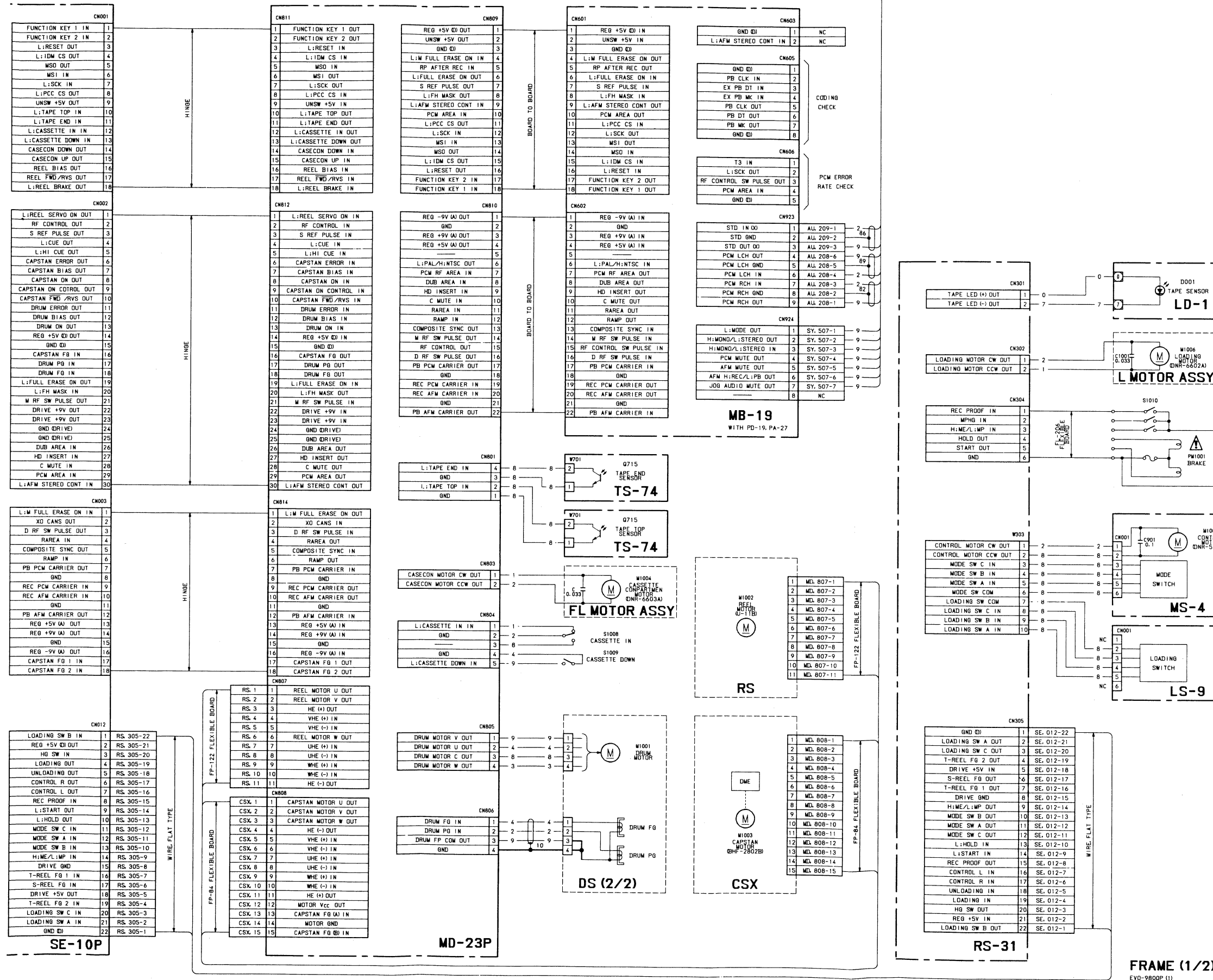


DC-45A — A SIDE —
1-631-800-21(1)
EVO-9800P

A Side is the same as COMPONENT Side



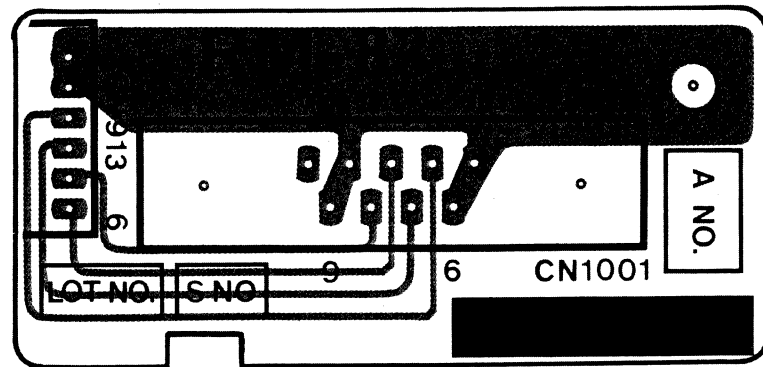
TO/FROM FRAME (2/2)



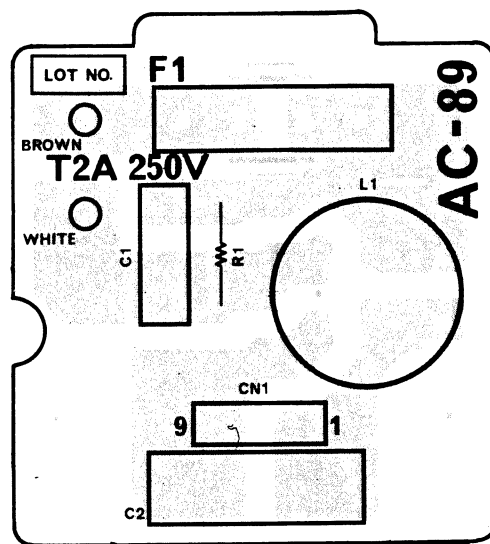
FRAME (1/2)
EVO-9800P (1)

RM-83; REMOTE CONNECTOR
AC-89; LINE FILTER

FRAME (2/2)



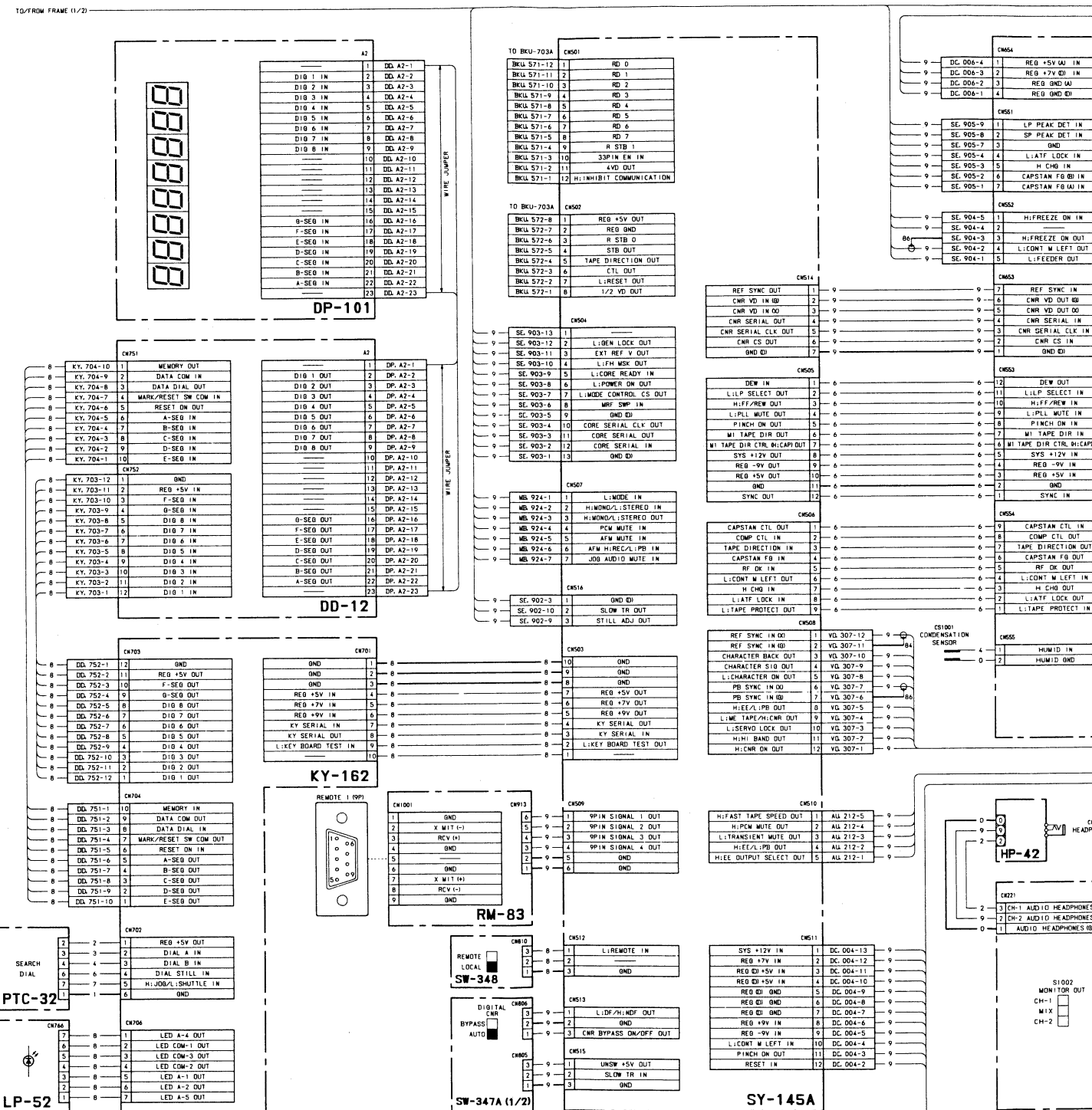
RM-83 — A SIDE—
1-635-086-11(1)
EVO-9800P

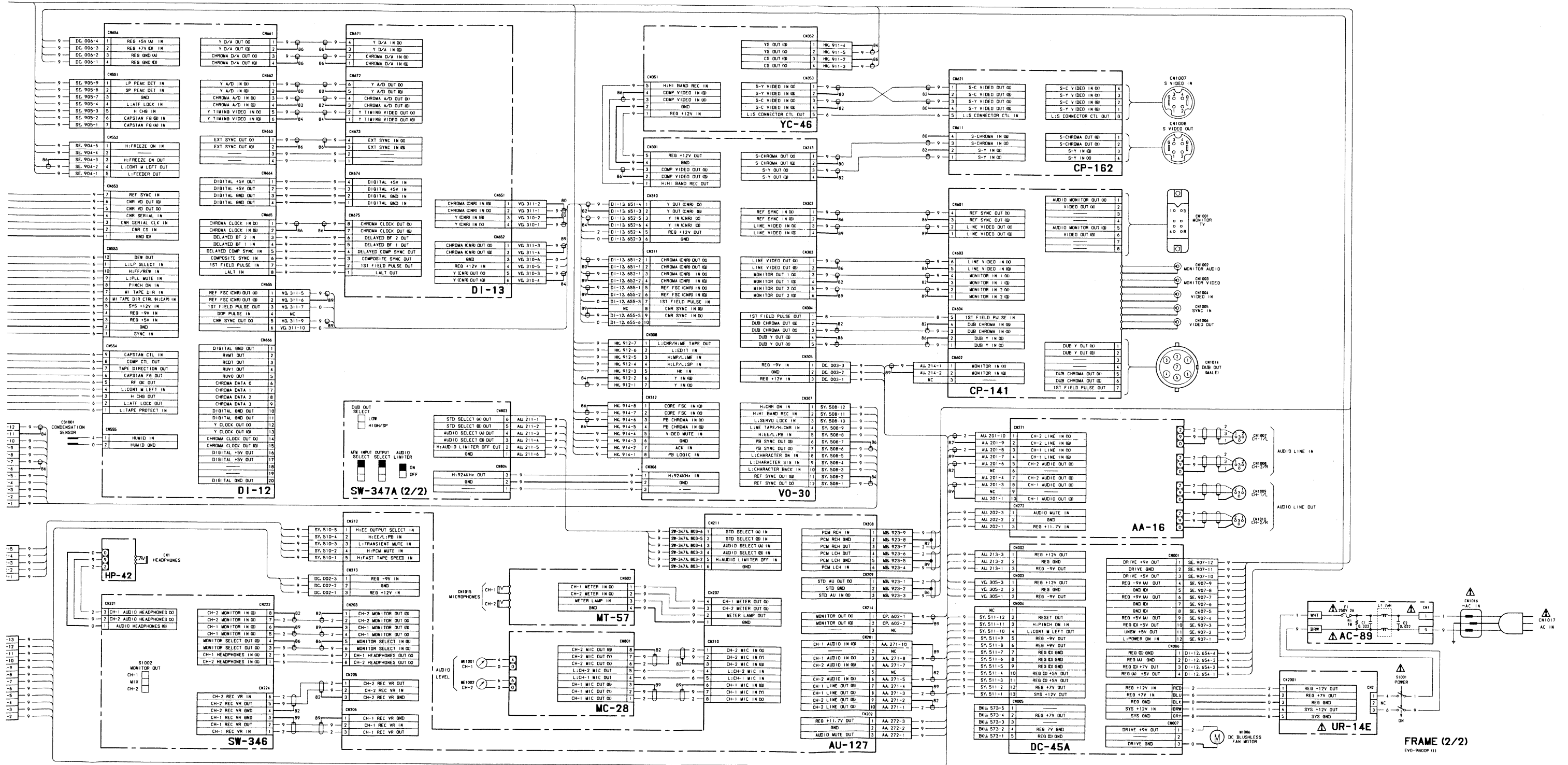


AC-89 — A SIDE—
1-622-786-12(1)
EVO-9800P

A Side is the same as COMPONENT Side

TO/FROM FRAME (1/2)





NOTE:
The Δ -marked components are critical to safety.
Replace only with same components as specified.

SECTION 14

SPARE PARTS AND FIXTURE

14-1. PARTS INFORMATION

- (1) The shaded and Δ -marked components are critical to safety.
Replace only with same components as specified.
- (2) Replacement Parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to improved parts and/or engineering changes or standardization of genuine parts.
This manual's exploded views and electrical spare parts list indicate the part numbers of the standardized genuine parts at the present. Regarding engineering part changes by the engineering department, refer to Sony service bulletins and service manual supplements.
- (3) The parts marked with s in the SP column of the exploded views and electrical spare parts lists are normally stocked for replacement purposes. The parts marked with o in the SP column are not normally required for routine service work. Orders for parts marked with o will be processed, but allow for additional delivery time.
- (4) Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- (5) (T) after a spring description is shown on the exploded views in order to indicate the number of spring turns required for the use.
.Example
Spring, tension (24T); This spring must be cut at its 24th turn for actual use.
- (6) All capacitors are in micro farads unless otherwise specified.
All inductors are in micro henries unless otherwise specified.
All resistors are in ohms.

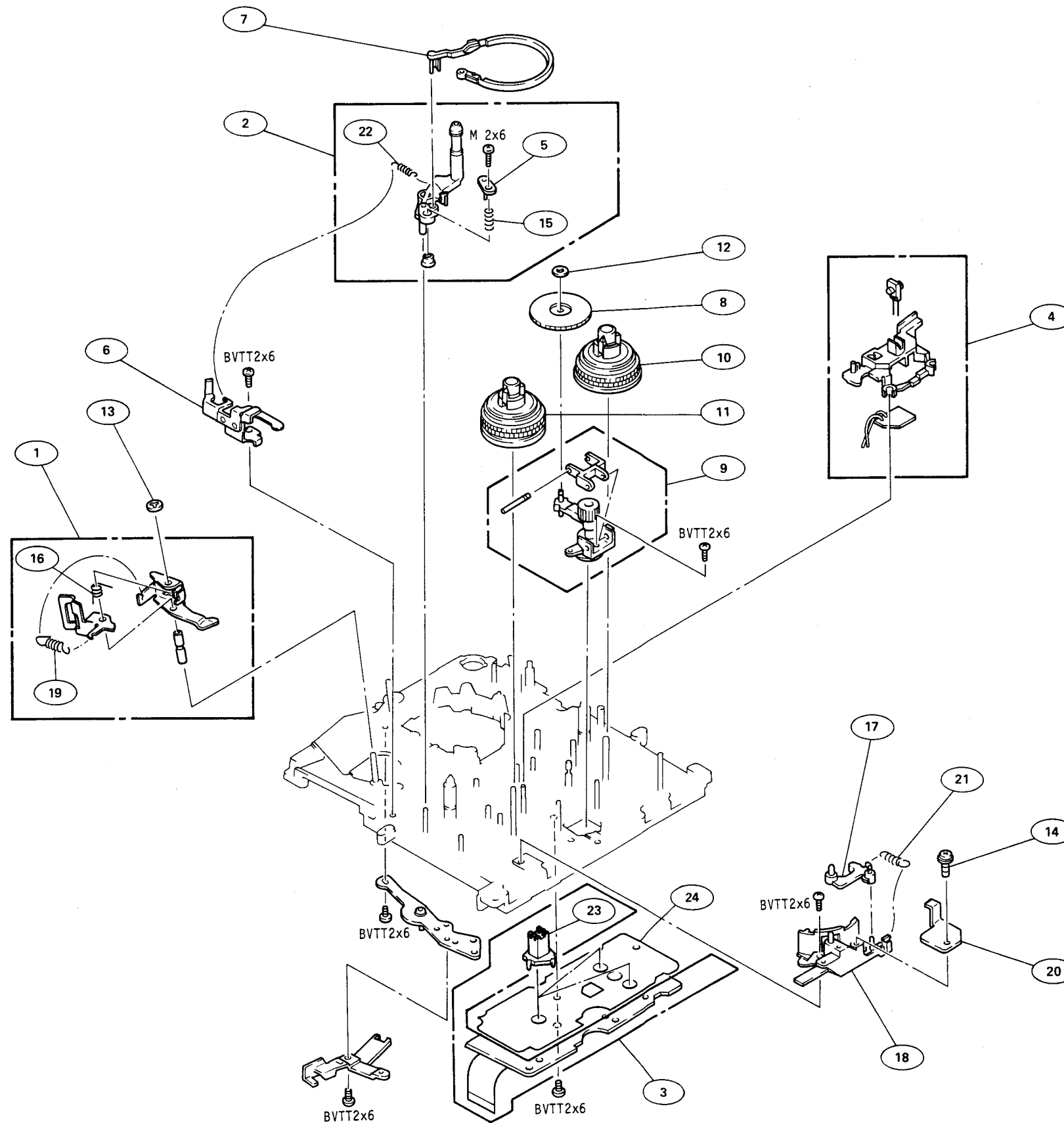
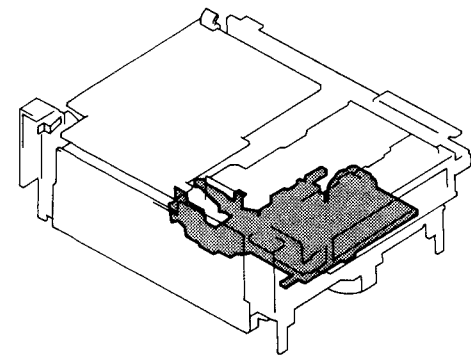
14-2. EXPLODED VIEWS

. Exploded views are composed of the following blocks.

- | | |
|--|--|
| (1) Reel Table Block Tension Regulator Arm T Reel Table S Reel Table S Soft Table | (6) Cassette-up Compartment Block (2) |
| (2) Threading Ring and Tape Path Blocks Tape Guides Threading Motor Threading Ring T Main Brake S Main Brake Capstan Motor | (7) Printed Circuit Boards Block (Mechanical Deck) Printed Circuit Boards Reel Motor |
| (3) Head Drum and Threading Control Blocks Head Drum L Slider Assembly Tape Guides Pinch Press Lever L-switch Assembly | (8) Function Control Chassis Block Function Control Panel Search Dial |
| (4) Mechanism Control Block M-switch Assembly T.S Brake REW Brake S Hard Brake Control Motor | (9) Connector Panel Block Switching Regulator (UR-14) |
| (5) Cassette-up Compartment Block (1) FL Motor (Cassette Loading) Tape TOP/END sensor | (10) Printed Circuit Boards Power Switch |
| | (11) Ornamental Panel Block Top Plate Front Panel Key Panel Side Plate Bottom Plate |

REEL TABLE BLOCK REEL TABLE BLOCK

Reel Table Block

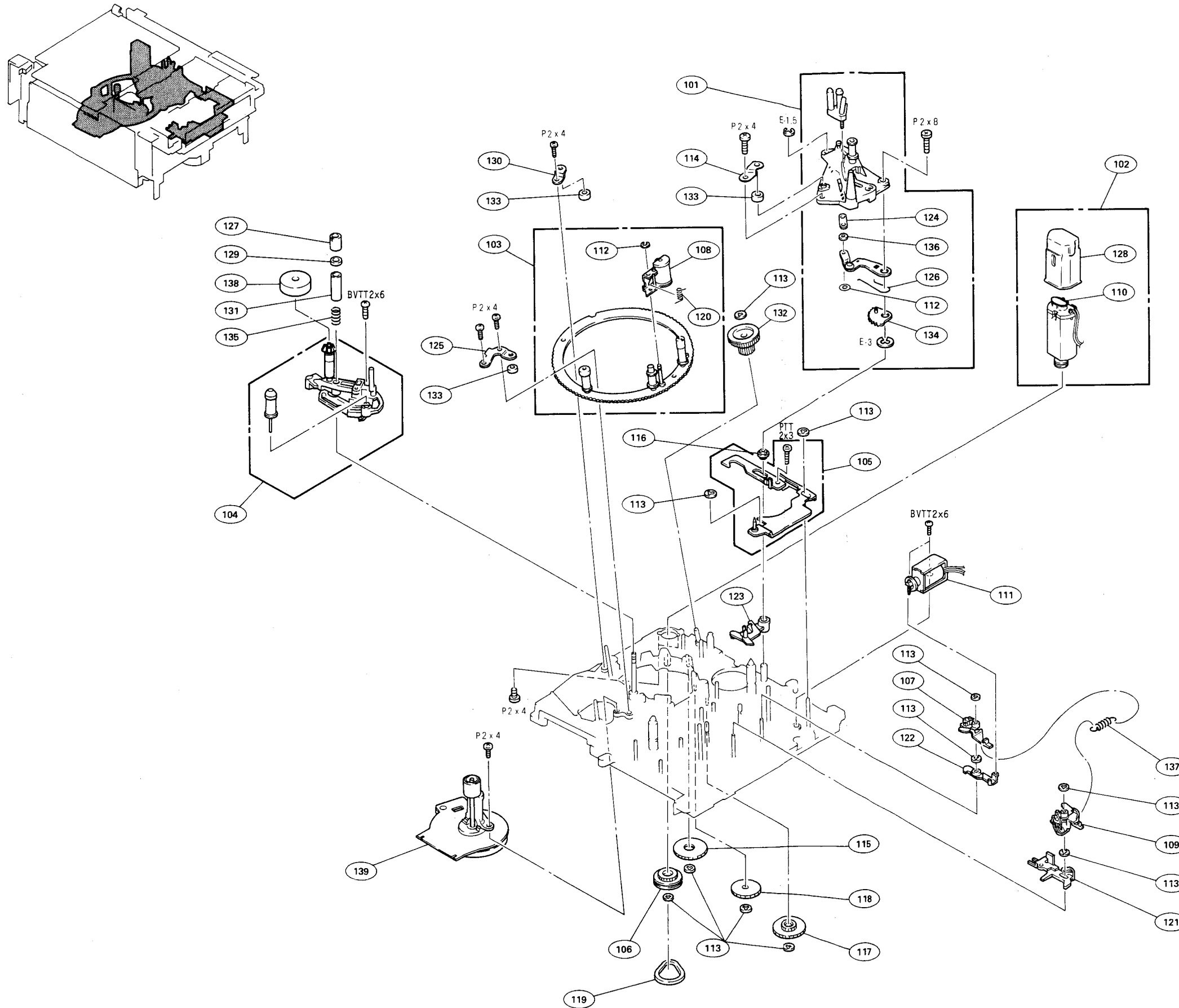


| No. | Part No. | SP | Description |
|-----|--------------|----|-------------------------------|
| 1 | A-7040-008-A | s | ARM ASSY, PINCH PRESS |
| 2 | A-7040-071-A | s | ARM ASSY, TENSION REGULATOR |
| 3 | A-7061-818-A | o | MOUNTED CIRCUIT BOARD, RS-31 |
| 4 | A-7070-024-A | o | MOUNTED CIRCUIT BOARD, LD-1 |
| 5 | X-3686-523-1 | o | PLATE ASSY, TENSION REGULATOR |
| 6 | X-3686-525-1 | o | HOOK ASSY, SPRING |
| 7 | X-3686-531-1 | s | BAND ASSY, TENSION REGULATOR |
| 8 | X-3686-763-1 | s | GEAR (B) ASSY, DRIVING |
| 9 | X-3711-963-1 | s | DRIVING COMPLETE ASSY |
| 10 | X-3711-998-1 | s | TABLE ASSY, REEL, TAKE-UP |
| 11 | X-3713-427-1 | s | TABLE ASSY, REEL, SUPPLY |
| 12 | 3-315-384-31 | s | WASHER, STOPPER |
| 13 | 3-669-465-00 | s | WASHER (1.5), STOPPER |
| 14 | 3-669-480-11 | s | + PTPWH 2 |
| 15 | 3-669-666-00 | s | SPRING, COMPRESSION |
| 16 | 3-686-568-01 | s | SPRING, TORSION |
| 17 | 3-686-637-01 | o | BRAKE (S), SOFT |
| 18 | 3-686-760-01 | o | GUIDE, BAND |
| 19 | 3-686-885-01 | s | SPRING, TENSION |
| 20 | 3-686-991-01 | o | STOPPER, REEL TABLE |
| 21 | 3-714-014-01 | s | SPRING, TENSION |
| 22 | 3-699-519-01 | s | SPRING, TENSION |
| 23 | 3-712-410-01 | s | HOLDER, RS |
| 24 | 3-712-411-01 | s | INSULATOR, RS |

THREADING RING AND TAPE PATH BLOCKS

THREADING RING AND TAPE PATH BLOCKS

Threading Ring and Tape Path Blocks

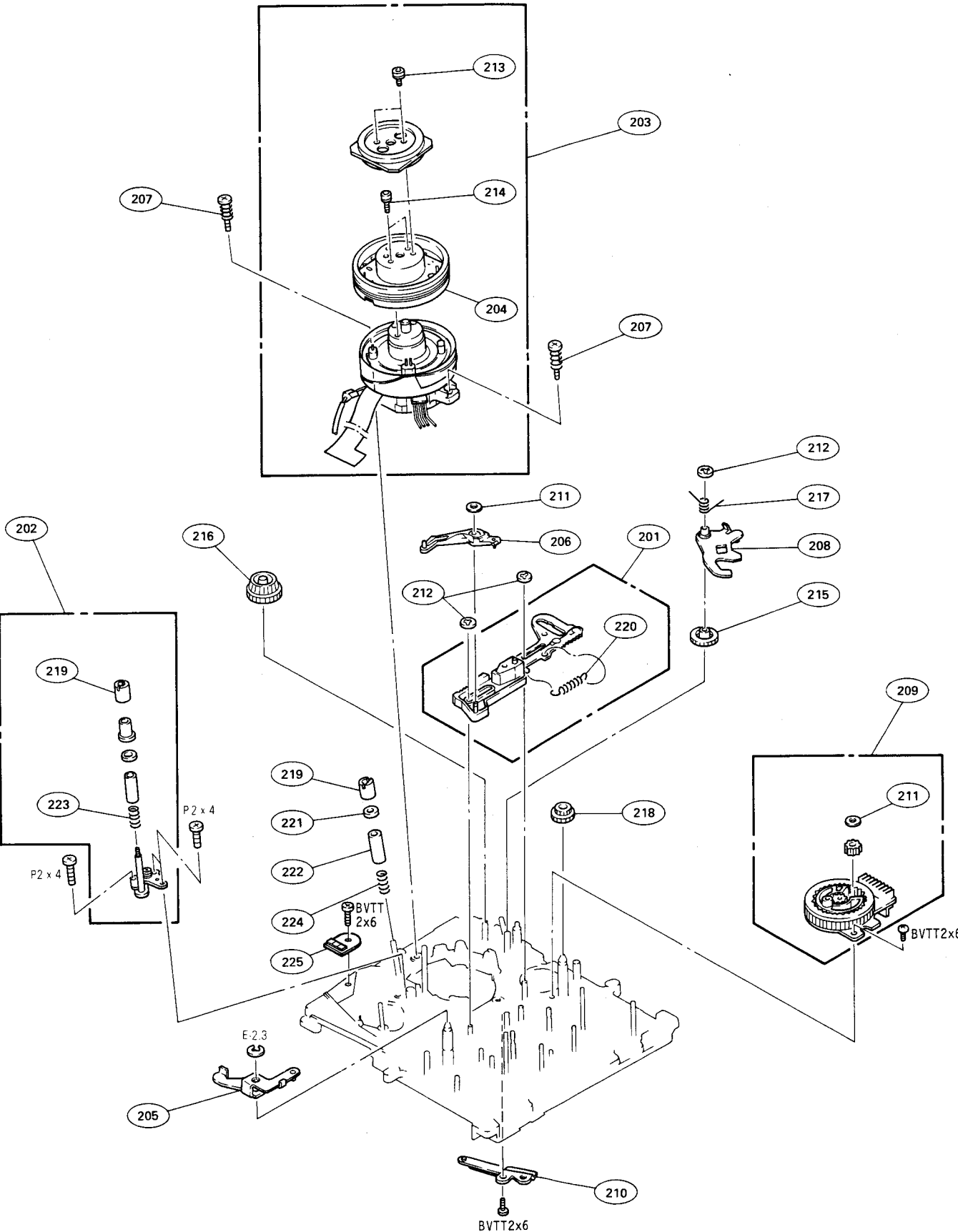
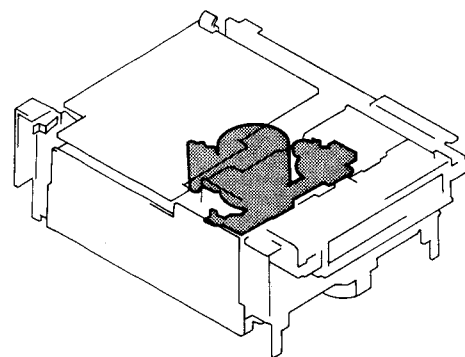


| No. | Part No. | SP | Description |
|-----|--------------|----|----------------------------------|
| 101 | A-7040-001-A | s | GUIDE BLOCK ASSY, SLANT |
| 102 | A-7040-065-A | s | MOTOR ASSY, L (THREADING) |
| 103 | A-7040-123-A | s | RING ASSY, THREADING |
| 104 | A-7040-169-D | s | GUIDE (P) ASSY, ENTRANCE |
| 105 | A-7040-199-A | s | SLIDER (M) BLOCK ASSY, LOCK |
| 106 | X-3686-514-1 | s | GEAR ASSY, NO.1 |
| 107 | X-3686-574-1 | s | BRAKE ASSY, MAIN, TAKE-UP |
| 108 | X-3686-648-1 | s | ARM ASSY, PINCH ROLLER |
| 109 | X-3713-429-1 | s | BRAKE ASSY, MAIN, S |
| 110 | 1-161-057-00 | s | CAP, CERAMIC 0,033MF X |
| 111 | 1-454-377-31 | s | SOLENOID, PLUNGER |
| 112 | 3-315-384-31 | s | WASHER, STOPPER |
| 113 | 3-669-465-00 | s | WASHER (1.5), STOPPER |
| 114 | 3-686-503-01 | o | RETAINER, ROLLER |
| 115 | 3-686-508-01 | s | GEAR, NO.2 |
| 116 | 3-686-537-01 | s | RETAINER, LOCK SLIDER |
| 117 | 3-686-544-01 | s | GEAR, NO.4 |
| 118 | 3-686-545-01 | s | GEAR, NO.3 |
| 119 | 3-686-546-01 | s | BELT, L- MOTOR |
| 120 | 3-726-704-01 | s | SPRING, TORSION |
| 121 | 3-686-629-01 | o | SLIDER, SELECTION, UPPER & LOWER |
| 122 | 3-686-635-01 | o | ARM, P |
| 123 | 3-686-636-04 | o | ARM, T,S RELEASE |
| 124 | 3-686-663-01 | s | WASHER, STOPPER, 2 GANG |
| 125 | 3-686-675-01 | o | STOPPER, RING |
| 126 | 3-686-701-01 | s | SPRING |
| 127 | 3-686-724-01 | s | NUT, GUIDE |
| 128 | 3-686-757-01 | o | CAP, SHIELD, L MOTOR |
| 129 | 3-686-894-01 | o | FLANGE, #3 #4 GUIDE |
| 130 | 3-686-911-01 | o | PLATE, TOP, ROLLER |
| 131 | 3-686-912-01 | s | GUIDE, #3 #4 |
| 132 | 3-697-518-01 | s | GEAR, NO.10 |
| 133 | 3-697-538-01 | s | ROLLER, RING |
| 134 | 3-699-509-01 | s | GEAR, SECTOR |
| 135 | 3-699-609-01 | s | SPRING, COMPRESSION |
| 136 | 3-701-436-21 | s | WASHER, POLY 1,6MM DIA., 0,5T |
| 137 | 3-713-560-01 | s | SPRING, TENSION |
| 138 | 3-722-153-01 | s | FLYWHEEL |
| 139 | 8-835-364-01 | s | MOTOR, DC (BHF-2802B) |

HEAD DRUM AND THREADING CONTROL BLOCKS

HEAD DRUM AND THREADING CONTROL BLOCKS

Head Drum and Threading Control Blocks

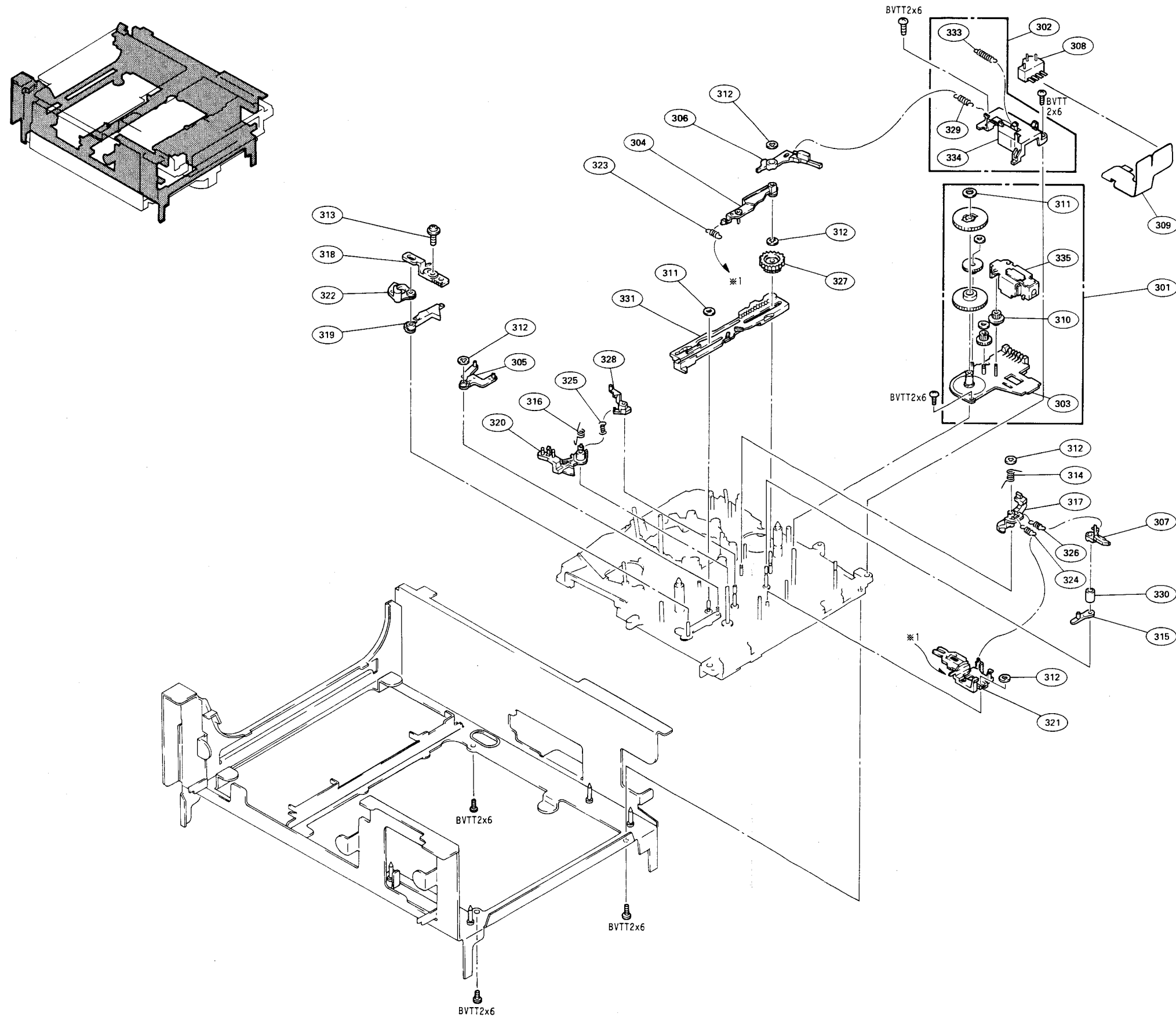


| No. | Part No. | SP | Description |
|-----|--------------|----|--------------------------------------|
| 201 | A-7040-010-A | o | SLIDER ASSY, L |
| 202 | A-7040-058-A | s | GUIDE BLOCK COMPLETE ASSY, #5 |
| 203 | A-7048-389-A | s | DRUM ASSY (DGH-68A-R) |
| 204 | A-7049-328-A | s | DRUM ASSY, ROTARY (UPPER) (DGR-68-R) |
| 205 | X-3686-509-1 | o | LEVER ASSY, PINCH PRESS |
| 206 | X-3686-518-3 | o | ARM ASSY |
| 207 | X-3686-569-1 | s | SCREW ASSY, FITTING |
| 208 | X-3686-579-1 | s | CHANGE ASSY, DRIVE |
| 209 | X-3712-403-1 | s | L-SW ASSY |
| 210 | 1-535-535-11 | s | TERMINAL, SHAFT GROUND |
| 211 | 3-315-384-31 | s | WASHER, STOPPER |
| 212 | 3-669-465-00 | s | WASHER (1.5), STOPPER |
| 213 | 3-686-422-01 | s | WASHER (2X2.7), BOLT, HOLE |
| 214 | 3-686-493-01 | s | SCREW (M2x5), P1 |
| 215 | 3-686-535-01 | s | GEAR, NO.8 |
| 216 | 3-686-539-01 | s | GEAR, NO.9 |
| 217 | 3-686-540-01 | s | SPRING, TORSION |
| 218 | 3-686-702-01 | s | GEAR, DRIVING, GUIDE, SLANT |
| 219 | 3-686-724-01 | s | NUT, GUIDE |
| 220 | 3-686-886-01 | s | SPRING, TENSION |
| 221 | 3-686-894-01 | o | FLANGE, #3 #4 GUIDE |
| 222 | 3-686-912-01 | s | GUIDE, #3 #4 |
| 223 | 3-699-514-01 | s | SPRING, COMPRESSION |
| 224 | 3-699-609-01 | s | SPRING, COMPRESSION |
| 225 | 1-808-506-12 | s | SENSOR, DEW CONDENSATION |

MECHANISM CONTROL BLOCK

MECHANISM CONTROL BLOCK

Mechanism Control Block

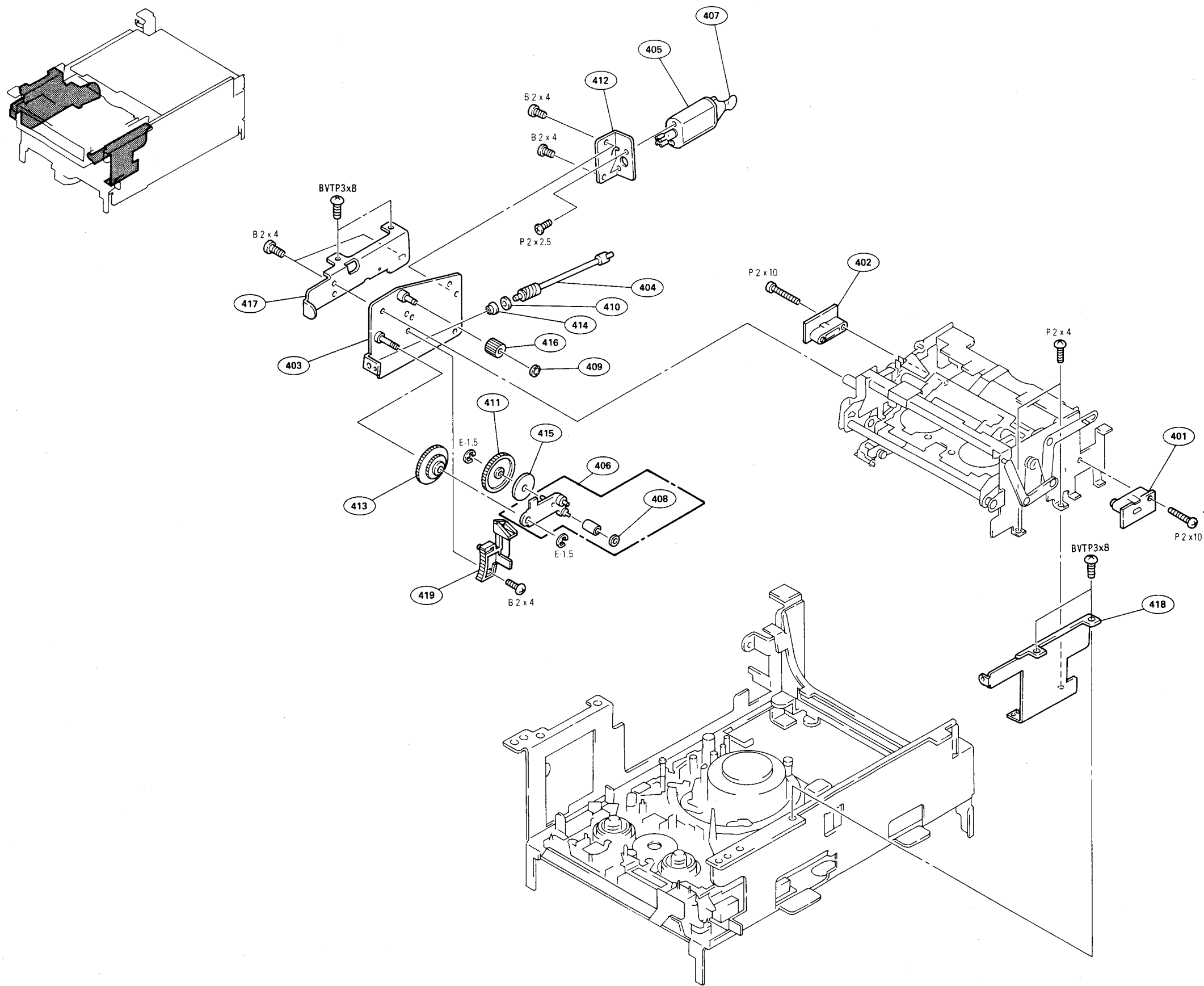


| No. | Part No. | SP | Description |
|-----|--------------|----|---------------------------------|
| 301 | A-7040-159-A | s | M-SW ASSY |
| 302 | A-7040-198-A | s | COVER (M) ASSY, C MOTOR |
| 303 | A-7090-029-A | s | MOUNTED CIRCUIT BOARD, MS-4 |
| 304 | X-3686-528-4 | o | ARM ASSY, B RELEASE |
| 305 | X-3686-530-1 | o | ARM (A) ASSY, SELECTION |
| 306 | X-3711-987-2 | s | BRAKE ASSY, T.S |
| 307 | X-3711-993-1 | s | BRAKE ASSY, REW |
| 308 | 1-572-298-21 | s | SWITCH, PUSH |
| 309 | 1-630-923-11 | o | FP-206 FLEXIBLE BOARD |
| 310 | 3-308-502-00 | s | WHEEL, WORM |
| 311 | 3-315-384-31 | s | WASHER, STOPPER |
| 312 | 3-669-465-00 | s | WASHER (1.5), STOPPER |
| 313 | 3-686-528-01 | s | SCREW (2X6), + |
| 314 | 3-686-579-01 | s | SPRING |
| 315 | 3-686-580-01 | o | ARM, SET UP |
| 316 | 3-686-603-04 | s | SPRING |
| 317 | 3-686-634-01 | o | ARM, RL |
| 318 | 3-686-642-01 | o | PLATE, ADJSUTMENT, BAND |
| 319 | 3-686-643-01 | o | ARM, MODE |
| 320 | 3-686-644-01 | o | ARM, BAND |
| 321 | 3-686-656-01 | o | SLIDER, B RELEASE |
| 322 | 3-686-755-01 | o | DISK, EJECT |
| 323 | 3-686-903-01 | s | SPRING, TENSION |
| 324 | 3-686-904-01 | s | SPRING, TENSION |
| 325 | 3-686-905-02 | s | SPRING, TENSION |
| 326 | 3-686-906-01 | s | SPRING, TENSION |
| 327 | 3-686-909-01 | s | GEAR, MODE OUTPUT |
| 328 | 3-686-996-01 | s | BRAKE (S), HARD |
| 329 | 3-714-035-01 | s | SPRING, TENSION |
| 330 | 3-716-933-01 | s | SPACER, REW BRAKE |
| 331 | 3-716-935-01 | s | SLIDER, M |
| 333 | 3-722-110-01 | s | SPRING, TENSION |
| 334 | 3-739-107-01 | s | COVER (M), C MOTOR |
| 335 | 8-835-138-01 | s | MOTOR, DC (DNR-5301B) (CONTROL) |

CASSETTE UP COMPARTMENT BLOCK (1)

CASSETTE UP COMPARTMENT BLOCK (1)

Cassette Up Compartment Block (1)

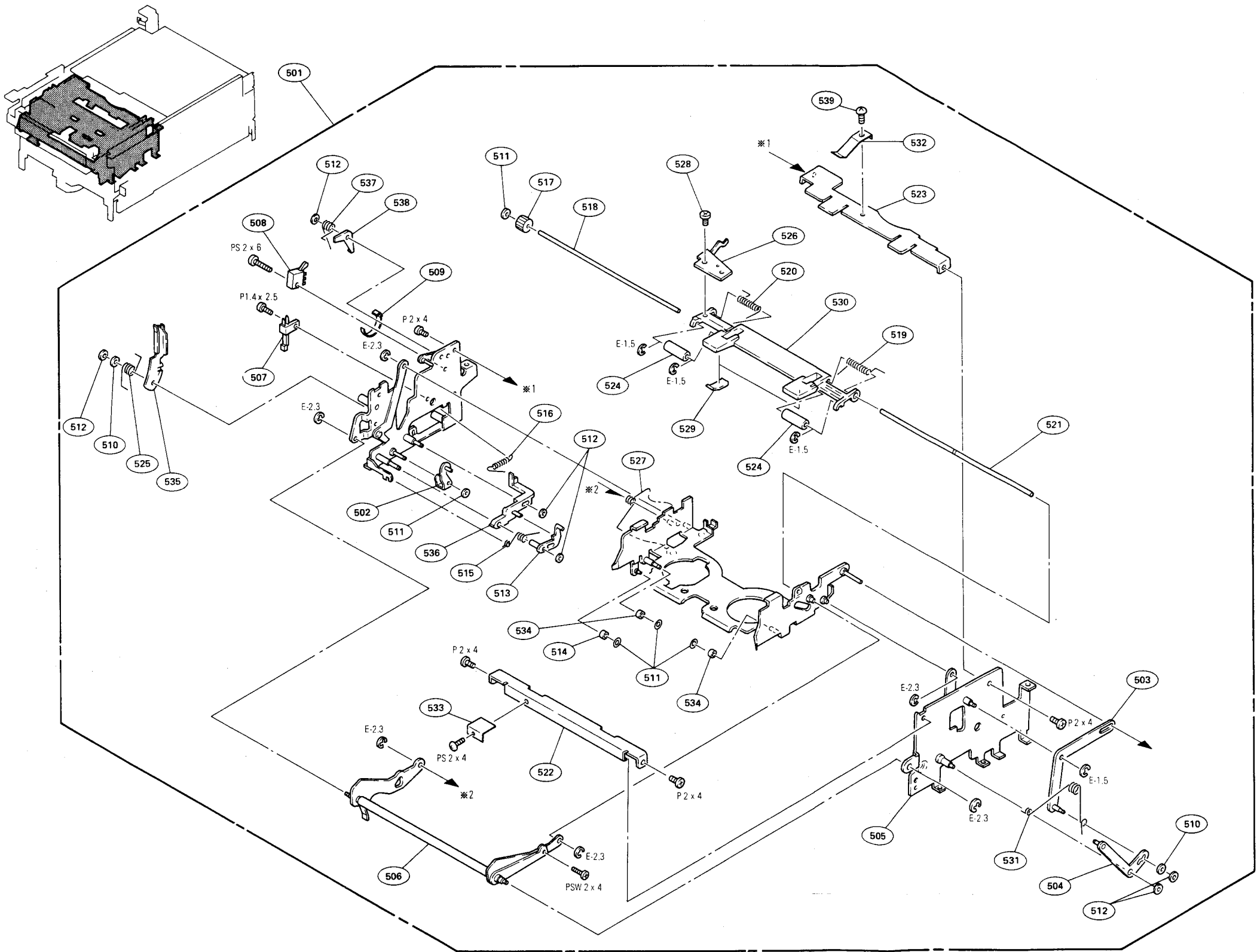


| No. | Part No. | SP | Description |
|-----|--------------|----|--------------------------------------|
| 401 | A-7070-627-A | o | MOUNTED CIRCUIT BOARD, TS-74 (RIGHT) |
| 402 | A-7070-628-A | o | MOUNTED CIRCUIT BOARD, TS-74 (LEFT) |
| 403 | X-3711-934-1 | o | PLATE SUB ASSY, BLOCK |
| 404 | X-3711-935-3 | s | SHAFT ASSY, WORM |
| 405 | X-3711-936-1 | s | MOTOR ASSY, FL (CASSETTE LOADING) |
| 406 | X-3714-193-1 | s | LEVER ASSY (B), GEAR |
| 407 | 1-161-057-00 | s | CAP, CERAMIC 0.033MF X |
| 408 | 3-315-414-31 | s | WASHER |
| 409 | 3-669-465-00 | s | WASHER (1.5), STOPPER |
| 410 | 3-701-437-11 | s | WASHER, POLY 2MM DIA., 0.25T |
| 411 | 3-713-430-01 | s | GEAR (B) |
| 412 | 3-713-431-01 | o | BRACKET, MOTOR |
| 413 | 3-713-433-01 | s | GEAR (A) |
| 414 | 3-713-439-01 | s | BEARING |
| 415 | 3-713-441-01 | o | SPRING, LEAF |
| 416 | 3-713-452-01 | s | GEAR (C) |
| 417 | 3-724-140-01 | o | BRACKET (LEFT) |
| 418 | 3-724-141-01 | o | BRACKET (RIGHT) |
| 419 | 3-724-913-02 | s | RACK |

CASSETTE UP COMPARTMENT BLOCK (2)

CASSETTE UP COMPARTMENT BLOCK (2)

Cassette Up Compartment Block (2)

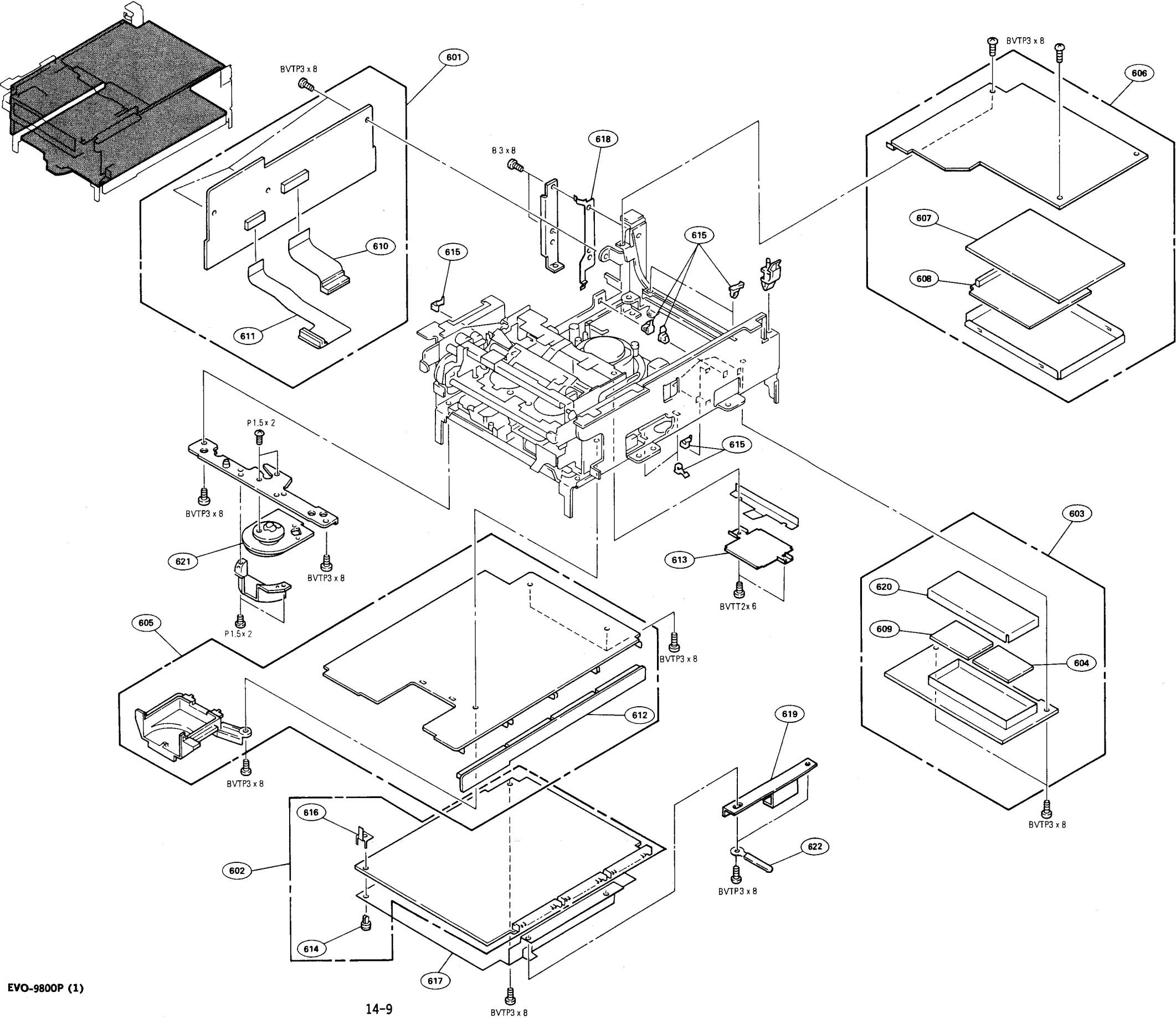


| No. | Part No. | SP | Description |
|-----|--------------|----|----------------------------------|
| 501 | A-7090-645-A | s | CASSETTE COMPARTMENT BLOCK ASSY |
| 502 | X-3686-541-1 | o | CLAW ASSY, LOCK |
| 503 | X-3711-930-1 | s | LEVER ASSY, HOLDER |
| 504 | X-3711-931-4 | s | LEVER ASSY, DOOR |
| 505 | X-3711-932-1 | o | PLATE (R) ASSY, SIDE |
| 506 | X-3711-937-1 | o | JOINT ASSY |
| 507 | 1-553-226-00 | s | SWITCH, LEAF (CASSETTE LOCK) |
| 508 | 1-570-407-11 | s | SWITCH, SLIDE (CASSETTE LOADING) |
| 509 | 3-337-402-01 | o | BAND, BINDING |
| 510 | 3-533-073-01 | s | WASHER |
| 511 | 3-578-265-11 | s | WASHER, STOPPER |
| 512 | 3-669-465-00 | s | WASHER (1.5), STOPPER |
| 513 | 3-686-692-01 | s | PREVENTION, SLIDER |
| 514 | 3-686-693-01 | o | ROLLER, LOCK |
| 515 | 3-686-694-01 | s | SPRING, TORTION |
| 516 | 3-696-047-01 | s | SPRING, TENSION |
| 517 | 3-713-429-01 | s | GEAR (D) |
| 518 | 3-713-440-01 | o | SHAFT, ROLLER |
| 519 | 3-713-442-01 | s | SPRING (RIGHT) |
| 520 | 3-713-445-01 | s | SPRING (LEFT) |
| 521 | 3-713-457-01 | o | SHAFT, JOINT |
| 522 | 3-713-458-01 | o | REINFORCEMENT |
| 523 | 3-713-462-03 | o | STOPPER, HOLDER |
| 524 | 3-713-466-01 | s | ROLLER |
| 525 | 3-713-488-01 | s | SPRING (2), TORTION |
| 526 | 3-724-912-01 | s | PLATE, FUNCTION, LEVER |
| 527 | 3-713-620-01 | s | SPRING (1), TORTION |
| 528 | 3-713-622-01 | s | SCREW (M1.3X4), TAPPING, 0 |
| 529 | 3-713-625-01 | s | SHOE, BRAKE |
| 530 | 3-713-626-01 | s | COVER, MULTI |
| 531 | 3-713-628-01 | s | SPRING, TORTION |
| 532 | 3-713-658-01 | s | SPRING |
| 533 | 3-716-921-01 | s | SPRING, LEAF |
| 534 | 3-719-590-01 | s | ROLLER, ASSIST |
| 535 | 3-721-125-01 | s | LEVER, LOCK |
| 536 | 3-721-136-01 | s | SLIDER, LOCK |
| 537 | 3-721-163-01 | s | SPRING |
| 538 | 3-721-166-01 | s | LEVER, SWITCH |
| 539 | 3-739-116-01 | s | SCREW (2X3), +PS |

PRINTED CIRCUIT BOARDS BLOCK (MECHANICAL DECK)

PRINTED CIRCUIT BOARDS BLOCK (MECHANICAL DECK)

Printed Circuit Boards Block (Mechanical Deck)

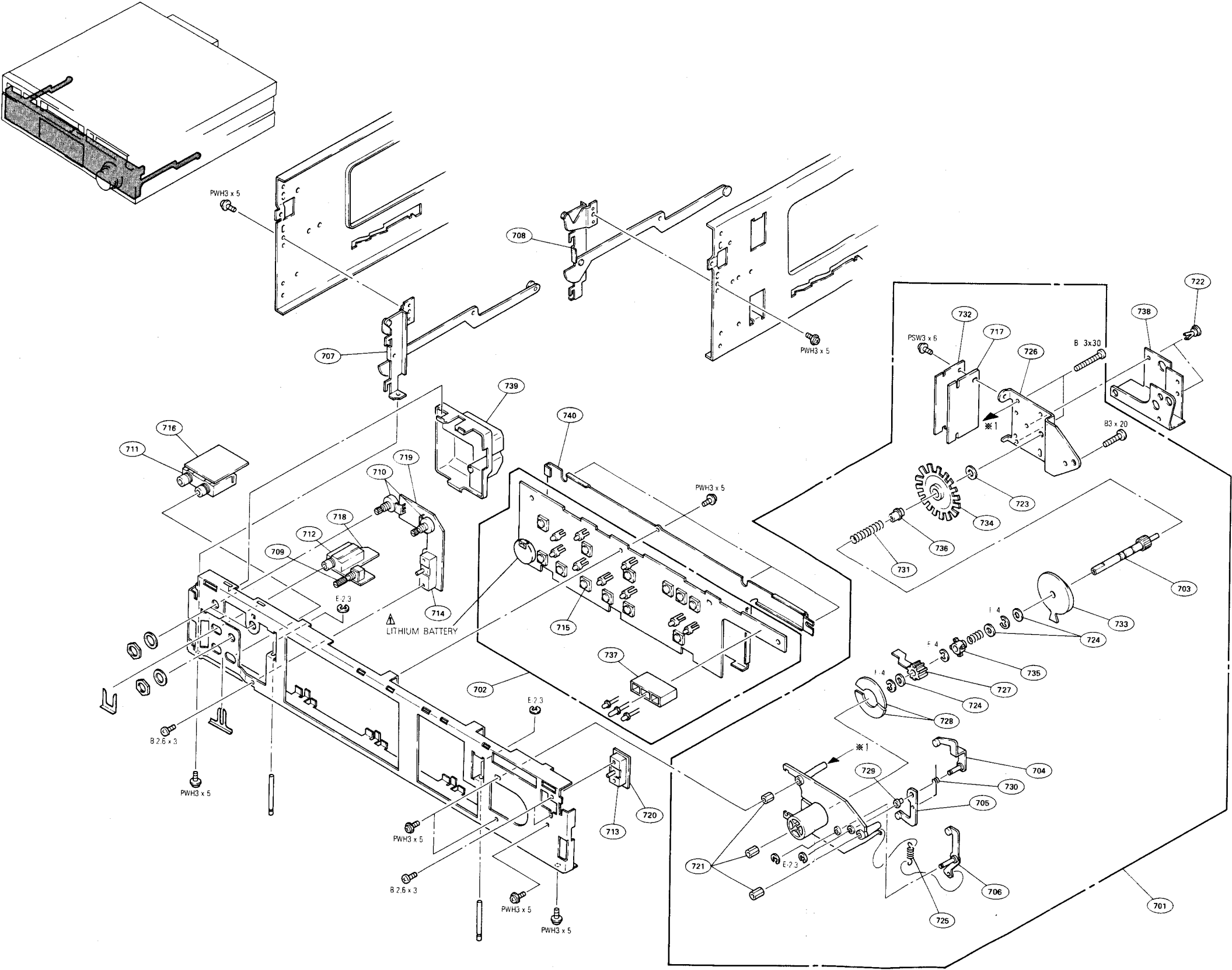


| No. | Part No. | SP | Description |
|-----|--------------|----|-----------------------------------|
| 601 | A-7062-168-A | o | MOUNTED CIRCUIT BOARD, MD-23 (P) |
| 602 | A-7062-164-A | o | MOUNTED CIRCUIT BOARD, HK-5 |
| 603 | A-7062-165-A | o | MOUNTED CIRCUIT BOARD, FR-43 |
| 604 | A-7062-166-A | o | MOUNTED CIRCUIT BOARD, RP-103 |
| 605 | A-7062-167-A | o | MOUNTED CIRCUIT BOARD, SE-10 (P) |
| 606 | A-7061-824-A | o | MOUNTED CIRCUIT BOARD, MB-19 |
| 607 | A-7061-825-A | o | MOUNTED CIRCUIT BOARD, PD-19 |
| 608 | A-7061-826-A | s | MOUNTED CIRCUIT BOARD, PA-27 |
| 609 | A-7061-827-A | o | MOUNTED CIRCUIT BOARD, RP-73 (LP) |
| 610 | A-7070-624-A | o | FP-84 FLEXIBLE BOARD |
| 611 | A-7070-625-A | o | FP-122 FLEXIBLE BOARD |
| 612 | A-7070-955-A | o | MOUNTED CIRCUIT BOARD, IG-4 |
| 613 | X-3691-922-1 | o | COVER ASSY, FLEXIBLE |
| 614 | 3-531-576-01 | s | RIVET |
| 615 | 3-671-150-11 | o | CLAMP |
| 616 | 3-724-107-01 | o | RETAINER, PC BOARD |
| 617 | 3-724-175-01 | o | PLATE, SHIELD, CORE |
| 618 | 3-724-199-01 | o | PLATE, SUPPORT, MB |
| 619 | 3-738-954-01 | o | STOPPER, HK |
| 620 | 3-739-102-01 | o | LID (H), UPPER, FR SHIELD CASE |
| 621 | 8-835-304-11 | s | MOTOR, DC (U-11B) (REEL MOTOR) |
| 622 | 3-701-822-00 | o | HOLDER, WIRE |

FUNCTION CONTROL CHASSIS BLOCK

FUNCTION CONTROL CHASSIS BLOCK

Function Control Chassis Block

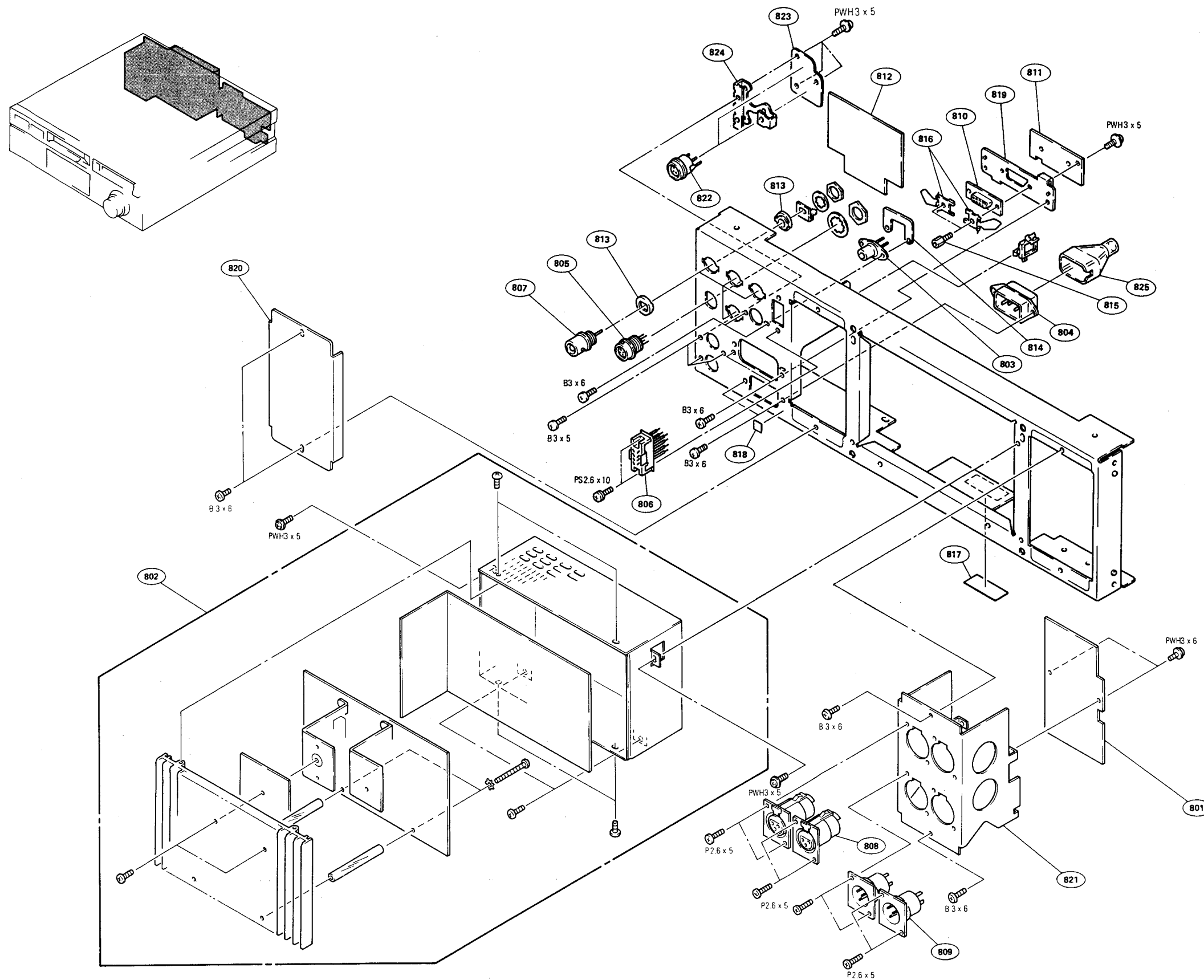


| No. | Part No. | SP | Description |
|-----|--------------|----|-------------------------------|
| 701 | A-6734-238-C | s | DIAL BLOCK ASSY, SERCH |
| 702 | A-7061-779-A | o | MOUNTED CIRCUIT BOARD, KY-162 |
| 703 | X-3717-226-1 | o | SHAFT SUB ASSY, MAIN |
| 704 | X-3717-227-1 | o | ARM (RIGHT) ASSY, S10 |
| 705 | X-3717-228-1 | o | ARM (LEFT) ASSY, S10 |
| 706 | X-3717-229-1 | o | ARM ASSY, RETURN |
| 707 | X-3738-903-1 | o | HINGE (LEFT) ASSY |
| 708 | X-3738-904-1 | o | HINGE (RIGHT) ASSY |
| 709 | 1-237-703-11 | s | RES, VAR, CARBON 2K/2K |
| 710 | 1-238-483-11 | s | RES, VAR, CARBON 5K |
| 711 | 1-507-797-21 | s | JACK, LARGE TYPE 2P |
| 712 | 1-507-854-00 | s | JACK, LARGE TYPE |
| 713 | 1-516-961-00 | s | SWITCH, LEVER SLIDE |
| 714 | 1-516-963-00 | s | SWITCH, LEVER SLIDE |
| 715 | 1-552-539-00 | s | SWITCH, KEY BOARD |
| 716 | 1-622-222-11 | o | PRINTED CIRCUIT BOARD, MC-28 |
| 717 | 1-622-638-11 | o | PRINTED CIRCUIT BOARD, PTC-32 |
| 718 | 1-629-477-11 | o | PRINTED CIRCUIT BOARD, HP-42 |
| 719 | 1-631-793-11 | o | PRINTED CIRCUIT BOARD, SW-346 |
| 720 | 1-631-795-11 | o | PRINTED CIRCUIT BOARD, SW-348 |
| 721 | 2-280-622-11 | o | SUPPORT (M3), HEXAGON |
| 722 | 3-531-576-01 | s | RIVET |
| 723 | 3-662-048-00 | s | WASHER, BRACKET |
| 724 | 3-701-443-21 | s | WASHER, POLY 5MM DIA., 0.50T |
| 725 | 3-701-788-XX | s | SPRING, TENSION (15T) |
| 726 | 3-717-315-01 | o | PLATE, BOTTOM, SD |
| 727 | 3-717-316-03 | o | GUIDE, LOCK IN |
| 728 | 3-717-317-01 | o | PLATE, CLUTCH |
| 729 | 3-717-318-01 | o | BEARING, S10 |
| 730 | 3-717-319-01 | o | SPRING, TORSION |
| 731 | 3-717-320-01 | o | SPRING, COMPRESSION |
| 732 | 3-717-321-01 | o | PROTECTOR, PTC |
| 733 | 3-717-417-01 | o | CAM |
| 734 | 3-717-418-01 | o | PLATE |
| 735 | 3-717-546-02 | o | GUIDE, LOCK OUT |
| 736 | 3-717-553-01 | o | BEARING, SD |
| 737 | 3-718-657-01 | o | HOLDER, LED |
| 738 | 3-718-771-01 | o | COVER (U), SD |
| 739 | 3-738-914-01 | o | PROTECTOR, MH |
| 740 | 3-738-933-01 | o | PROTECTOR, KY |

CONNECTOR PANEL BLOCK

CONNECTOR PANEL BLOCK

Connector Panel Block

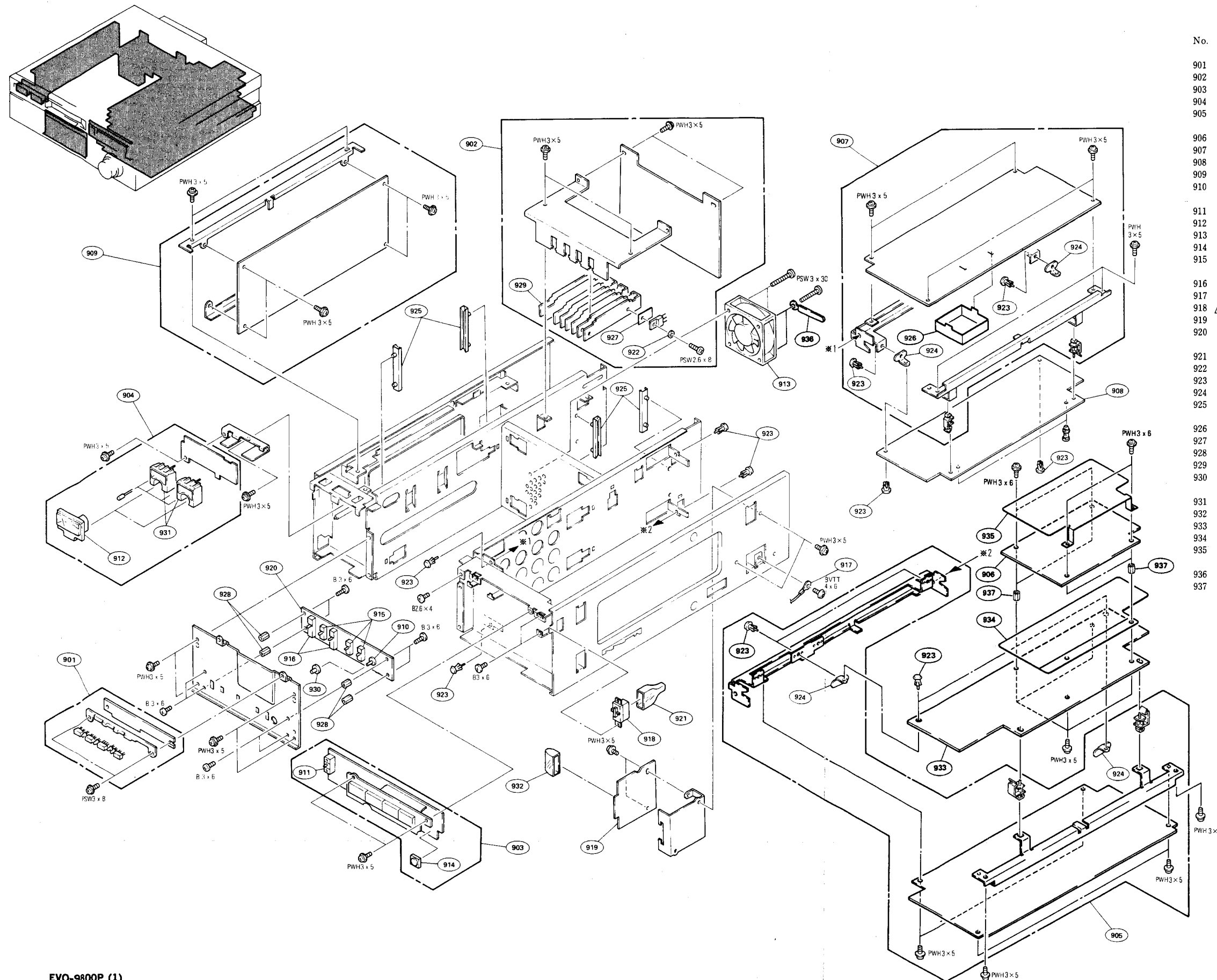


| No. | Part No. | SP | Description |
|-----|--------------|----|-------------------------------|
| 801 | A-6713-363-A | o | MOUNTED CIRCUIT BOARD, AA-16 |
| 802 | 1-413-249-12 | o | SWITCHING REGULATOR (UR-14E) |
| 803 | 1-507-467-00 | s | 1P PIN JACK |
| 804 | 1-560-222-11 | s | INLET 3P |
| 805 | 1-561-045-21 | s | CONNECTOR, (R-F) |
| 806 | 1-561-577-21 | s | CONNECTOR (DIP TYPE) 8P |
| 807 | 1-562-227-21 | o | RECEPTACLE, BNC |
| 808 | 1-563-029-21 | s | CONNECTOR (RECEPTACLE) 3P |
| 809 | 1-563-030-21 | s | CONNECTOR (RECEPTACLE) 3P |
| 810 | 1-563-890-21 | s | SOCKET, D-SUB CONNECTOR 9P |
| 811 | 1-635-086-11 | o | PRINTED CIRCUIT BOARD, RM-83 |
| 812 | 1-631-807-11 | o | PRINTED CIRCUIT BOARD, CP-141 |
| 813 | 3-654-545-00 | s | SPACER, BNC |
| 814 | 3-661-147-00 | o | NUT, PLATE |
| 815 | 3-668-459-11 | o | SCREW, CONNECTOR |
| 816 | 3-668-460-00 | o | SPRING |
| 817 | 3-703-043-31 | o | LABEL, MAIN CAUTION |
| 818 | 3-703-082-21 | s | LABEL, CAUTION |
| 819 | 3-738-955-01 | o | BRACKET (P), 9P |
| 820 | 3-733-627-01 | o | COVER, IF |
| 821 | 3-733-641-01 | o | BRACKET, XLR |
| 822 | 1-566-850-31 | s | CONNECTOR, (S) TERMINAL 4P |
| 823 | 1-635-085-11 | o | PRINTED CIRCUIT BOARD, CP-162 |
| 824 | 3-738-958-01 | o | BRACKET, S |
| 825 | 4-601-466-11 | s | COVER, 3P INLET |

PRINTED CIRCUIT BOARDS

PRINTED CIRCUIT BOARDS

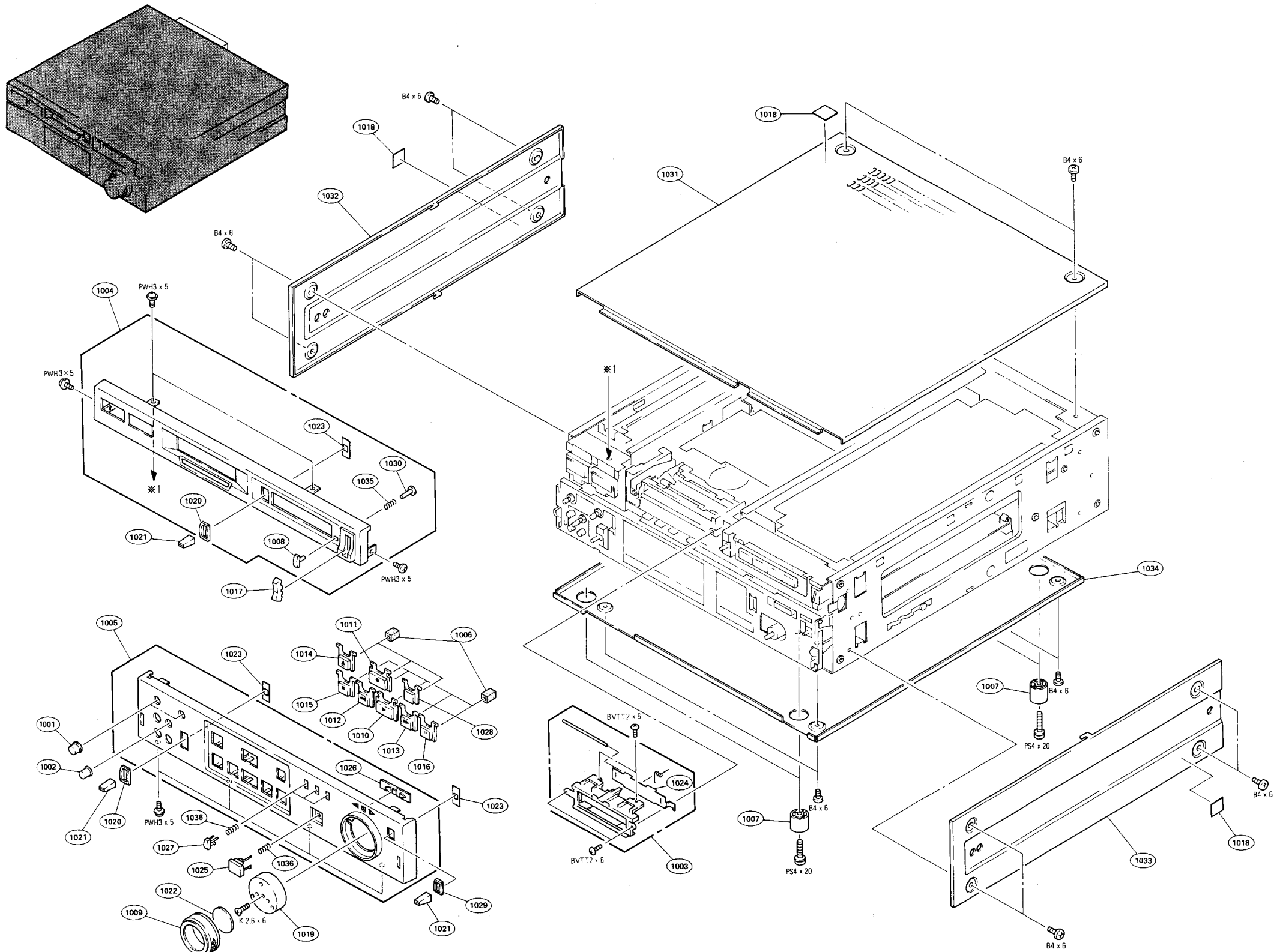
Printed Circuit Boards



| No. | Part No. | SP | Description |
|-----|--------------|----|--------------------------------|
| 901 | A-7061-770-A | o | MOUNTED CIRCUIT BOARD, LP-52 |
| 902 | A-7062-150-A | o | MOUNTED CIRCUIT BOARD, DC-45A |
| 903 | A-7061-772-A | o | MOUNTED CIRCUIT BOARD, DD-12 |
| 904 | A-7061-773-A | o | MOUNTED CIRCUIT BOARD, MT-57 |
| 905 | A-7062-151-A | o | MOUNTED CIRCUIT BOARD, SY-145A |
| 906 | A-7062-155-A | o | MOUNTED CIRCUIT BOARD, DI-13 |
| 907 | A-7062-152-A | o | MOUNTED CIRCUIT BOARD, VO-30 |
| 908 | A-7062-153-A | o | MOUNTED CIRCUIT BOARD, YC-46 |
| 909 | A-7061-778-A | o | MOUNTED CIRCUIT BOARD, AU-127 |
| 910 | 1-230-122-00 | s | RES, VAR, CARBON 100K |
| 911 | 1-516-995-00 | s | SWITCH, LEVER SLIDE |
| 912 | 1-520-506-11 | s | METER, AUDIO LEVEL |
| 913 | 1-541-360-21 | s | MOTOR, DC BLUSHLESS FAN |
| 914 | 1-552-539-00 | s | SWITCH, KEY BOARD |
| 915 | 1-554-481-00 | s | SWITCH, SLIDE |
| 916 | 1-571-908-11 | s | SWITCH, SLIDE |
| 917 | 1-555-724-00 | o | WIRE, GROUND |
| 918 | 1-570-117-41 | s | POWER, SW |
| 919 | 1-622-786-11 | o | PRINTED CIRCUIT BOARD, AC-85 |
| 920 | 1-631-794-11 | o | PRINTED CIRCUIT BOARD, SW-347 |
| 921 | 2-269-962-00 | o | COVER, SW |
| 922 | 2-371-561-00 | s | BUSHING (P), INSULATING |
| 923 | 3-646-090-00 | s | RIVET, NYLON |
| 924 | 3-657-153-00 | o | HINGE |
| 925 | 3-673-676-01 | o | RAIL, GUIDE, CHASSIS |
| 926 | 3-738-963-01 | o | CASE, SHIELD, VO |
| 927 | 3-703-037-00 | s | INSULATOR, TO-220 |
| 928 | 3-718-661-01 | o | SUPPORT, TC |
| 929 | 3-718-718-02 | o | HEAT SINK (TA) |
| 930 | 3-738-903-01 | s | KNOB, ADJUST |
| 931 | 3-738-923-01 | o | HOLDER, LED |
| 932 | 4-601-472-00 | o | COVER, FUSE |
| 933 | A-7062-154-A | o | MOUNTED CIRCUIT BOARD, DI-12 |
| 934 | 3-165-107-01 | o | SHIELD PLATE, DI-12 |
| 935 | 3-165-108-01 | o | SHIELD PLATE, DI-13 |
| 936 | 3-701-822-00 | o | HOLDER, WIRE |
| 937 | 3-718-661-01 | o | SUPPORT, TC |

ORNAMENTAL PANEL BLOCK ORNAMENTAL PANEL BLOCK

Ornamental Panel Block



| No. | Part No. | SP | Description |
|------|--------------|----|-------------------------------|
| 1001 | X-3661-073-0 | s | KNOB ASSY, CONTROL |
| 1002 | X-3668-075-0 | s | KNOB ASSY, CONTROL |
| 1003 | X-3738-905-1 | o | WINDOW ASSY |
| 1004 | X-3738-908-1 | o | FRONT PANEL (P) ASSY |
| 1005 | X-3738-907-1 | o | KEY PANEL ASSY |
| 1006 | 2-284-744-00 | o | CUSHION (B), KEY |
| 1007 | 3-642-656-01 | s | LEG |
| 1008 | 3-668-008-02 | s | PUSH BUTTON (3X5) |
| 1009 | 3-668-012-00 | s | RUBBER, DIAL KNOB |
| 1010 | 3-672-782-02 | s | KEY TOP (A) 'PLAY' |
| 1011 | 3-672-782-11 | s | KEY TOP (A) 'REC' |
| 1012 | 3-672-783-02 | s | KEY TOP (B) 'REW' |
| 1013 | 3-672-783-12 | s | KEY TOP (B) 'F FWD' |
| 1014 | 3-672-783-32 | s | KEY TOP (B) 'EJECT' |
| 1015 | 3-672-783-42 | s | KEY TOP (B) 'STOP' |
| 1016 | 3-672-783-52 | s | KEY TOP (B) 'PAUSE' |
| 1017 | 3-688-814-01 | s | CAP, SWITCH |
| 1018 | 3-703-082-21 | s | LABEL, CAUTION |
| 1019 | 3-717-370-01 | o | KNOB, DIAL |
| 1020 | 3-717-374-01 | o | FRAME (23X12), ORNAMENTAL, SW |
| 1021 | 3-717-382-01 | s | KNOB, LEVER SW |
| 1022 | 3-717-557-01 | o | PLATE, KNOB |
| 1023 | 3-717-613-01 | o | PLATE ORNAMENTAL. LSW |
| 1024 | 3-721-101-71 | o | DOOR |
| 1025 | 3-733-602-01 | s | KEY TOP (S) |
| 1026 | 3-733-605-01 | s | COVER, LED |
| 1027 | 3-733-606-01 | s | PUSH BUTTON (5X9) |
| 1028 | 3-738-906-01 | s | KEY TOP (TR) |
| 1029 | 3-738-907-01 | s | FRAME, ORNAMENTAL, LEVER SW |
| 1030 | 3-738-912-01 | s | PIN (9), PUSH BUTTON |
| 1031 | 3-738-924-02 | o | PLATE, TOP |
| 1032 | 3-738-925-03 | o | PLATE (LEFT), SIDE |
| 1033 | 3-738-926-03 | o | PLATE (RIGHT), SIDE |
| 1034 | 3-738-927-01 | o | PLATE, BOTTOM |
| 1035 | 4-309-349-00 | s | SPRING |
| 1036 | 4-866-613-00 | s | SPRING, COMPRESSION |



14-3. ELECTRICAL PARTS LIST

CAPACITOR, CHIP CERAMIC

Part No. SP Description

| | | | | |
|--------------|---------------------|--------|-----------|-----|
| 1-163-083-00 | s CAP, CHIP CERAMIC | 1pF | +/-0.25pF | 50V |
| 1-163-085-00 | s CAP, CHIP CERAMIC | 2pF | +/-0.25pF | 50V |
| 1-163-087-00 | s CAP, CHIP CERAMIC | 4pF | +/-0.25pF | 50V |
| 1-163-089-00 | s CAP, CHIP CERAMIC | 6pF | +/-0.5pF | 50V |
| 1-163-091-00 | s CAP, CHIP CERAMIC | 8pF | +/-0.5pF | 50V |
| 1-163-093-00 | s CAP, CHIP CERAMIC | 10pF | 5% | 50V |
| 1-163-097-00 | s CAP, CHIP CERAMIC | 15pF | 5% | 50V |
| 1-163-101-00 | s CAP, CHIP CERAMIC | 22pF | 5% | 50V |
| 1-163-105-00 | s CAP, CHIP CERAMIC | 33pF | 5% | 50V |
| 1-163-109-00 | s CAP, CHIP CERAMIC | 47pF | 5% | 50V |
| 1-163-113-00 | s CAP, CHIP CERAMIC | 68pF | 5% | 50V |
| 1-163-117-00 | s CAP, CHIP CERAMIC | 100pF | 5% | 50V |
| 1-163-121-00 | s CAP, CHIP CERAMIC | 150pF | 5% | 50V |
| 1-163-125-00 | s CAP, CHIP CERAMIC | 220pF | 5% | 50V |
| 1-163-129-00 | s CAP, CHIP CERAMIC | 330pF | 5% | 50V |
| 1-163-133-00 | s CAP, CHIP CERAMIC | 470pF | 5% | 50V |
| 1-163-137-00 | s CAP, CHIP CERAMIC | 680pF | 5% | 50V |
| 1-163-141-00 | s CAP, CHIP CERAMIC | 1000pF | 5% | 50V |
| 1-163-145-00 | s CAP, CHIP CERAMIC | 1500pF | 10% | 50V |
| 1-163-013-00 | s CAP, CHIP CERAMIC | 2200pF | 10% | 50V |
| 1-163-015-00 | s CAP, CHIP CERAMIC | 3300pF | 10% | 50V |
| 1-163-017-00 | s CAP, CHIP CERAMIC | 4700pF | 10% | 50V |
| 1-163-019-00 | s CAP, CHIP CERAMIC | 6800pF | 10% | 50V |
| 1-163-021-00 | s CAP, CHIP CERAMIC | 0.01 | 10% | 50V |
| 1-163-023-00 | s CAP, CHIP CERAMIC | 0.015 | 10% | 50V |
| 1-163-034-00 | s CAP, CHIP CERAMIC | 0.033 | | 50V |
| 1-163-035-00 | s CAP, CHIP CERAMIC | 0.047 | | 50V |
| 1-163-036-00 | s CAP, CHIP CERAMIC | 0.068 | | 50V |
| 1-163-038-00 | s CAP, CHIP CERAMIC | 0.1 | | 50V |

CAPACITOR, ELECTROLYTIC

Part No. SP Description

| | | | | |
|--------------|--------------|------|-----|------|
| 1-124-902-00 | s CAP, ELECT | 0.47 | 20% | 50V |
| 1-124-791-11 | s CAP, ELECT | 1.0 | 20% | 100V |
| 1-124-925-11 | s CAP, ELECT | 2.2 | 20% | 100V |
| 1-123-382-00 | s CAP, ELECT | 3.3 | 20% | 100V |
| 1-124-927-00 | s CAP, ELECT | 4.7 | 20% | 100V |
| 1-123-875-91 | s CAP, ELECT | 10 | 20% | 50V |
| 1-124-915-11 | s CAP, ELECT | 10 | 20% | 63V |
| 1-124-667-11 | s CAP, ELECT | 10 | 20% | 100V |
| 1-124-908-11 | s CAP, ELECT | 22 | 20% | 50V |
| 1-124-916-11 | s CAP, ELECT | 22 | 20% | 63V |
| 1-124-929-11 | s CAP, ELECT | 22 | 20% | 100V |
| 1-124-963-11 | s CAP, ELECT | 33 | 20% | 16V |
| 1-124-482-11 | s CAP, ELECT | 33 | 20% | 35V |
| 1-124-917-11 | s CAP, ELECT | 33 | 20% | 63V |
| 1-124-930-11 | s CAP, ELECT | 33 | 20% | 100V |
| 1-124-446-11 | s CAP, ELECT | 47 | 20% | 10V |
| 1-124-477-11 | s CAP, ELECT | 47 | 20% | 25V |
| 1-124-910-11 | s CAP, ELECT | 47 | 20% | 50V |
| 1-124-918-11 | s CAP, ELECT | 47 | 20% | 63V |
| 1-124-931-11 | s CAP, ELECT | 47 | 20% | 100V |
| 1-124-443-00 | s CAP, ELECT | 100 | 20% | 10V |
| 1-126-101-11 | s CAP, ELECT | 100 | 20% | 16V |
| 1-124-478-11 | s CAP, ELECT | 100 | 20% | 25V |
| 1-124-122-11 | s CAP, ELECT | 100 | 20% | 50V |
| 1-124-572-11 | s CAP, ELECT | 100 | 20% | 63V |
| 1-123-605-00 | s CAP, ELECT | 100 | 20% | 100V |
| 1-124-444-00 | s CAP, ELECT | 220 | 20% | 10V |
| 1-124-120-11 | s CAP, ELECT | 220 | 20% | 25V |
| 1-124-484-11 | s CAP, ELECT | 220 | 20% | 35V |
| 1-124-911-11 | s CAP, ELECT | 220 | 20% | 50V |
| 1-124-919-51 | s CAP, ELECT | 220 | 20% | 63V |
| 1-124-628-11 | s CAP, ELECT | 220 | 20% | 100V |
| 1-124-442-00 | s CAP, ELECT | 330 | 20% | 6.3V |
| 1-124-604-00 | s CAP, ELECT | 330 | 20% | 10V |
| 1-124-119-00 | s CAP, ELECT | 330 | 20% | 16V |
| 1-124-479-11 | s CAP, ELECT | 330 | 20% | 25V |
| 1-124-485-11 | s CAP, ELECT | 330 | 20% | 35V |
| 1-124-912-11 | s CAP, ELECT | 330 | 20% | 50V |
| 1-124-472-11 | s CAP, ELECT | 470 | 20% | 10V |
| 1-124-475-11 | s CAP, ELECT | 470 | 20% | 16V |
| 1-124-480-11 | s CAP, ELECT | 470 | 20% | 25V |
| 1-126-104-11 | s CAP, ELECT | 470 | 20% | 35V |
| 1-124-913-11 | s CAP, ELECT | 470 | 20% | 50V |
| 1-124-921-11 | s CAP, ELECT | 470 | 20% | 63V |
| 1-124-471-00 | s CAP, ELECT | 1000 | 20% | 6.3V |
| 1-124-473-11 | s CAP, ELECT | 1000 | 20% | 10V |
| 1-124-555-00 | s CAP, ELECT | 1000 | 20% | 16V |
| 1-124-557-11 | s CAP, ELECT | 1000 | 20% | 25V |
| 1-126-105-11 | s CAP, ELECT | 1000 | 20% | 35V |
| 1-124-637-11 | s CAP, ELECT | 1000 | 20% | 50V |
| 1-124-922-11 | s CAP, ELECT | 1000 | 20% | 63V |
| 1-124-893-11 | s CAP, ELECT | 2200 | 20% | 10V |
| 1-124-556-11 | s CAP, ELECT | 2200 | 20% | 16V |
| 1-124-563-11 | s CAP, ELECT | 2200 | 20% | 25V |
| 1-124-618-11 | s CAP, ELECT | 2200 | 20% | 35V |
| 1-124-607-11 | s CAP, ELECT | 2200 | 20% | 50V |
| 1-124-621-11 | s CAP, ELECT | 3300 | 20% | 6.3V |
| 1-124-887-00 | s CAP, ELECT | 3300 | 20% | 16V |
| 1-124-636-00 | s CAP, ELECT | 3300 | 20% | 25V |
| 1-124-762-00 | s CAP, ELECT | 4700 | 20% | 10V |

(CAPACITOR, ELECTROLYTIC)

Part No. SP Description

1-124-898-11 s CAP, ELECT 4700 20% 16V
 1-124-564-11 s CAP, ELECT 4700 20% 25V
 1-124-891-11 s CAP, ELECT 10000 20% 6.3V
 1-124-763-00 s CAP, ELECT 10000 20% 10V
 1-124-902-00 s CAP, ELECT 0.47 20% 50V

1-124-791-11 s CAP, ELECT 1.0 20% 100V
 1-124-925-11 s CAP, ELECT 2.2 20% 100V
 1-123-382-00 s CAP, ELECT 3.3 20% 100V
 1-124-927-00 s CAP, ELECT 4.7 20% 100V
 1-123-875-91 s CAP, ELECT 10 20% 50V

1-124-908-11 s CAP, ELECT 22 20% 50V
 1-124-963-11 s CAP, ELECT 33 20% 16V
 1-124-482-11 s CAP, ELECT 33 20% 35V
 1-124-917-11 s CAP, ELECT 33 20% 63V
 1-124-446-11 s CAP, ELECT 47 20% 10V

1-124-477-11 s CAP, ELECT 47 20% 25V
 1-124-910-11 s CAP, ELECT 47 20% 50V
 1-124-443-00 s CAP, ELECT 100 20% 10V
 1-126-101-11 s CAP, ELECT 100 20% 16V
 1-124-478-11 s CAP, ELECT 100 20% 25V

1-124-122-11 s CAP, ELECT 100 20% 50V
 1-124-444-00 s CAP, ELECT 220 20% 10V
 1-124-120-11 s CAP, ELECT 220 20% 25V
 1-124-484-11 s CAP, ELECT 220 20% 35V
 1-124-911-11 s CAP, ELECT 220 20% 50V

1-124-442-00 s CAP, ELECT 330 20% 6.3V
 1-124-604-00 s CAP, ELECT 330 20% 10V
 1-124-119-00 s CAP, ELECT 330 20% 16V
 1-124-479-11 s CAP, ELECT 330 20% 25V
 1-124-485-11 s CAP, ELECT 330 20% 35V

1-124-912-11 s CAP, ELECT 330 20% 50V
 1-124-472-11 s CAP, ELECT 470 20% 10V
 1-124-475-11 s CAP, ELECT 470 20% 16V
 1-124-480-11 s CAP, ELECT 470 20% 25V
 1-126-104-11 s CAP, ELECT 470 20% 35V

1-124-913-11 s CAP, ELECT 470 20% 50V

RESISTOR, CHIP

Part No. SP Description

1-216-295-00 s RES, CHIP 0 5% 1/10W
 1-216-298-00 s RES, CHIP 2.2 5% 1/10W
 1-216-302-00 s RES, CHIP 2.7 5% 1/10W
 1-216-304-00 s RES, CHIP 3.3 5% 1/10W
 1-216-306-00 s RES, CHIP 3.9 5% 1/10W

1-216-308-00 s RES, CHIP 4.7 5% 1/10W
 1-216-309-00 s RES, CHIP 5.6 5% 1/10W
 1-216-311-00 s RES, CHIP 6.8 5% 1/10W
 1-216-313-00 s RES, CHIP 8.2 5% 1/10W
 1-216-001-00 s RES, CHIP 10 5% 1/10W

1-216-003-00 s RES, CHIP 12 5% 1/10W
 1-216-005-00 s RES, CHIP 15 5% 1/10W
 1-216-007-00 s RES, CHIP 18 5% 1/10W
 1-216-009-00 s RES, CHIP 22 5% 1/10W
 1-216-011-00 s RES, CHIP 27 5% 1/10W

1-216-013-00 s RES, CHIP 33 5% 1/10W
 1-216-015-00 s RES, CHIP 39 5% 1/10W
 1-216-017-00 s RES, CHIP 47 5% 1/10W
 1-216-019-00 s RES, CHIP 56 5% 1/10W
 1-216-021-00 s RES, CHIP 68 5% 1/10W

1-216-023-00 s RES, CHIP 82 5% 1/10W
 1-216-025-00 s RES, CHIP 100 5% 1/10W
 1-216-027-00 s RES, CHIP 120 5% 1/10W
 1-216-029-00 s RES, CHIP 150 5% 1/10W
 1-216-031-00 s RES, CHIP 180 5% 1/10W

1-216-033-00 s RES, CHIP 220 5% 1/10W
 1-216-035-00 s RES, CHIP 270 5% 1/10W
 1-216-037-00 s RES, CHIP 330 5% 1/10W
 1-216-039-00 s RES, CHIP 390 5% 1/10W
 1-216-041-00 s RES, CHIP 470 5% 1/10W

1-216-043-00 s RES, CHIP 560 5% 1/10W
 1-216-045-00 s RES, CHIP 680 5% 1/10W
 1-216-047-00 s RES, CHIP 820 5% 1/10W
 1-216-049-00 s RES, CHIP 1k 5% 1/10W
 1-216-051-00 s RES, CHIP 1.2k 5% 1/10W

1-216-053-00 s RES, CHIP 1.5k 5% 1/10W
 1-216-055-00 s RES, CHIP 1.8k 5% 1/10W
 1-216-057-00 s RES, CHIP 2.2k 5% 1/10W
 1-216-059-00 s RES, CHIP 2.7k 5% 1/10W
 1-216-061-00 s RES, CHIP 3.3k 5% 1/10W

1-216-063-00 s RES, CHIP 3.9k 5% 1/10W
 1-216-065-00 s RES, CHIP 4.7k 5% 1/10W
 1-216-067-00 s RES, CHIP 5.6k 5% 1/10W
 1-216-069-00 s RES, CHIP 6.8k 5% 1/10W
 1-216-071-00 s RES, CHIP 8.2k 5% 1/10W

1-216-073-00 s RES, CHIP 10k 5% 1/10W
 1-216-075-00 s RES, CHIP 12k 5% 1/10W
 1-216-077-00 s RES, CHIP 15k 5% 1/10W
 1-216-079-00 s RES, CHIP 18k 5% 1/10W
 1-216-081-00 s RES, CHIP 22k 5% 1/10W

1-216-083-00 s RES, CHIP 27k 5% 1/10W
 1-216-085-00 s RES, CHIP 33k 5% 1/10W
 1-216-087-00 s RES, CHIP 39k 5% 1/10W
 1-216-089-00 s RES, CHIP 47k 5% 1/10W
 1-216-091-00 s RES, CHIP 56k 5% 1/10W

1-216-093-00 s RES, CHIP 68k 5% 1/10W
 1-216-095-00 s RES, CHIP 82k 5% 1/10W
 1-216-097-00 s RES, CHIP 100k 5% 1/10W
 1-216-099-00 s RES, CHIP 120k 5% 1/10W
 1-216-101-00 s RES, CHIP 150k 5% 1/10W

(RESISTOR, CHIP)

Part No. SP Description

1-216-103-00 s RES, CHIP 180k 5% 1/10W
 1-216-105-00 s RES, CHIP 220k 5% 1/10W
 1-216-107-00 s RES, CHIP 270k 5% 1/10W
 1-216-109-00 s RES, CHIP 330k 5% 1/10W
 1-216-111-00 s RES, CHIP 390k 5% 1/10W

 1-216-113-00 s RES, CHIP 470k 5% 1/10W
 1-216-115-00 s RES, CHIP 560k 5% 1/10W
 1-216-117-00 s RES, CHIP 680k 5% 1/10W
 1-216-119-00 s RES, CHIP 820k 5% 1/10W
 1-216-121-00 s RES, CHIP 1.0M 5% 1/10W

 1-216-123-00 s RES, CHIP 1.2M 5% 1/10W
 1-216-125-00 s RES, CHIP 1.5M 5% 1/10W
 1-216-127-00 s RES, CHIP 1.8M 5% 1/10W
 1-216-129-00 s RES, CHIP 2.2M 5% 1/10W
 1-216-131-00 s RES, CHIP 2.7M 5% 1/10W

 1-216-133-00 s RES, CHIP 3.3M 5% 1/10W

CONNECTOR

Part No. SP Description

1-506-467-11 o RECEPTACLE 2P MALE (STRAIGHT TYPE)
 1-506-481-11 o RECEPTACLE 2P MALE (ANGLE TYPE)
 1-562-147-11 o HOUSING 2P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

 1-506-468-11 o RECEPTACLE 3P MALE (STRAIGHT TYPE)
 1-506-482-11 o RECEPTACLE 3P MALE (ANGLE TYPE)
 1-562-148-11 o HOUSING 3P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

 1-506-469-11 o RECEPTACLE 4P MALE (STRAIGHT TYPE)
 1-506-483-21 o RECEPTACLE 4P MALE (ANGLE TYPE)
 1-562-149-11 o HOUSING 4P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

 1-506-470-11 o RECEPTACLE 5P MALE (STRAIGHT TYPE)
 1-506-484-11 o RECEPTACLE 5P MALE (ANGLE TYPE)
 1-562-150-11 o HOUSING 5P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

 1-506-471-31 o RECEPTACLE 6P MALE (STRAIGHT TYPE)
 1-506-485-11 o RECEPTACLE 6P MALE (ANGLE TYPE)
 1-562-151-11 o HOUSING 6P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

 1-506-472-11 o RECEPTACLE 7P MALE (STRAIGHT TYPE)
 1-506-486-11 o RECEPTACLE 7P MALE (ANGLE TYPE)
 1-562-152-11 o HOUSING 7P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

 1-506-473-11 o RECEPTACLE 8P MALE (STRAIGHT TYPE)
 1-506-487-11 o RECEPTACLE 8P MALE (ANGLE TYPE)
 1-562-153-11 o HOUSING 8P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

 1-506-474-11 o RECEPTACLE 9P MALE (STRAIGHT TYPE)
 1-506-488-11 o RECEPTACLE 9P MALE (ANGLE TYPE)
 1-562-154-11 o HOUSING 9P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

 1-506-475-11 o RECEPTACLE 10P MALE (STRAIGHT TYPE)
 1-506-489-11 o RECEPTACLE 10P MALE (ANGLE TYPE)
 1-562-155-11 o HOUSING 10P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

 1-506-476-11 o RECEPTACLE 11P MALE (STRAIGHT TYPE)
 1-506-490-21 o RECEPTACLE 11P MALE (ANGLE TYPE)
 1-562-156-11 o HOUSING 11P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

 1-506-477-11 o RECEPTACLE 12P MALE (STRAIGHT TYPE)
 1-506-491-11 o RECEPTACLE 12P MALE (ANGLE TYPE)
 1-562-157-11 o HOUSING 12P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

 1-506-478-11 o RECEPTACLE 13P MALE (STRAIGHT TYPE)
 1-506-492-11 o RECEPTACLE 13P MALE (ANGLE TYPE)
 1-562-627-11 o HOUSING 13P
 1-563-088-11 o CONTACT AWG24-30
 1-563-089-11 o CONTACT AWG32

(CONNECTOR)

Part No. SP Description

| | | | |
|--------------|---|------------|--------------------------|
| 1-506-479-11 | o | RECEPTACLE | 14P MALE (STRAIGHT TYPE) |
| 1-506-493-11 | o | RECEPTACLE | 14P MALE (ANGLE TYPE) |
| 1-562-185-11 | o | HOUSING | 14P |
| 1-563-088-11 | o | CONTACT | AWG24-30 |
| 1-563-089-11 | o | CONTACT | AWG32 |
| | | | |
| 1-506-480-11 | o | RECEPTACLE | 15P MALE (STRAIGHT TYPE) |
| 1-506-494-11 | o | RECEPTACLE | 15P MALE (ANGLE TYPE) |
| 1-562-958-11 | o | HOUSING | 15P |
| 1-563-088-11 | o | CONTACT | AWG24-30 |
| 1-563-089-11 | o | CONTACT | AWG32 |

INDUCTOR, MICRO

Part No. SP Description

| | | | | |
|--------------|---|-----------------|------|----|
| 1-408-876-00 | s | INDUCTOR, MICRO | 0.18 | 5% |
| 1-408-877-00 | s | INDUCTOR, MICRO | 0.22 | 5% |
| 1-408-878-00 | s | INDUCTOR, MICRO | 0.33 | 5% |
| 1-408-879-21 | s | INDUCTOR, MICRO | 0.47 | 5% |
| 1-408-931-00 | s | INDUCTOR, MICRO | 0.56 | 5% |
| | | | | |
| 1-408-880-00 | s | INDUCTOR, MICRO | 0.68 | 5% |
| 1-408-763-00 | s | INDUCTOR, MICRO | 0.82 | 5% |
| 1-408-397-00 | s | INDUCTOR, MICRO | 1.0 | 5% |
| 1-408-398-00 | s | INDUCTOR, MICRO | 1.2 | 5% |
| 1-408-399-00 | s | INDUCTOR, MICRO | 1.5 | 5% |
| | | | | |
| 1-408-400-00 | s | INDUCTOR, MICRO | 1.8 | 5% |
| 1-408-401-00 | s | INDUCTOR, MICRO | 2.2 | 5% |
| 1-408-402-00 | s | INDUCTOR, MICRO | 2.7 | 5% |
| 1-408-403-00 | s | INDUCTOR, MICRO | 3.3 | 5% |
| 1-408-404-00 | s | INDUCTOR, MICRO | 3.9 | 5% |
| | | | | |
| 1-408-405-00 | s | INDUCTOR, MICRO | 4.7 | 5% |
| 1-408-406-00 | s | INDUCTOR, MICRO | 5.6 | 5% |
| 1-408-407-00 | s | INDUCTOR, MICRO | 6.8 | 5% |
| 1-408-408-00 | s | INDUCTOR, MICRO | 8.2 | 5% |
| 1-408-409-00 | s | INDUCTOR, MICRO | 10 | 5% |
| | | | | |
| 1-408-410-00 | s | INDUCTOR, MICRO | 12 | 5% |
| 1-408-411-00 | s | INDUCTOR, MICRO | 15 | 5% |
| 1-408-412-00 | s | INDUCTOR, MICRO | 18 | 5% |
| 1-408-413-00 | s | INDUCTOR, MICRO | 22 | 5% |
| 1-408-414-00 | s | INDUCTOR, MICRO | 27 | 5% |
| | | | | |
| 1-408-415-00 | s | INDUCTOR, MICRO | 33 | 5% |
| 1-408-416-00 | s | INDUCTOR, MICRO | 39 | 5% |
| 1-408-417-21 | s | INDUCTOR, MICRO | 47 | 5% |
| 1-408-418-00 | s | INDUCTOR, MICRO | 56 | 5% |
| 1-408-419-00 | s | INDUCTOR, MICRO | 68 | 5% |
| | | | | |
| 1-408-420-00 | s | INDUCTOR, MICRO | 82 | 5% |
| 1-408-421-00 | s | INDUCTOR, MICRO | 100 | 5% |
| 1-408-422-00 | s | INDUCTOR, MICRO | 120 | 5% |
| 1-408-423-00 | s | INDUCTOR, MICRO | 150 | 5% |
| 1-408-424-00 | s | INDUCTOR, MICRO | 180 | 5% |
| | | | | |
| 1-408-425-00 | s | INDUCTOR, MICRO | 220 | 5% |
| 1-408-426-00 | s | INDUCTOR, MICRO | 270 | 5% |
| 1-408-427-00 | s | INDUCTOR, MICRO | 330 | 5% |
| 1-408-428-00 | s | INDUCTOR, MICRO | 390 | 5% |
| 1-408-429-00 | s | INDUCTOR, MICRO | 470 | 5% |

AA-16 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--------------------------------|
| 1pc | A-6713-363-A | o MOUNTED CIRCUIT BOARD, AA-16 |
| C1 | 1-162-294-31 | s CERAMIC 0.001uF 10% 50V |
| C12 | 1-162-207-31 | s CERAMIC 22PF 5% 50V |
| C100 | 1-126-103-11 | s ELECT 470uF 20% 16V |
| C101 | 1-162-294-31 | s CERAMIC 0.001uF 10% 50V |
| C112 | 1-162-207-31 | s CERAMIC 22PF 5% 50V |
| C150 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| D10 | 8-719-911-19 | s DIODE 1SS119 |
| D11 | 8-719-911-19 | s DIODE 1SS119 |
| D110 | 8-719-911-19 | s DIODE 1SS119 |
| D111 | 8-719-911-19 | s DIODE 1SS119 |
| D150 | 8-719-109-93 | s DIODE RD6.2ES-B2 |
| IC101 | 8-759-981-98 | s IC RC4560DD |
| PS1 | 1-532-727-11 | s LINK, IC 0.25A |
| Q10 | 8-729-306-92 | s TRANSISTOR 2SD669A |
| Q11 | 8-729-304-92 | s TRANSISTOR 2SB649A |
| Q12 | 8-729-201-05 | s TRANSISTOR 2SC2878-B |
| Q110 | 8-729-306-92 | s TRANSISTOR 2SD669A |
| Q111 | 8-729-304-92 | s TRANSISTOR 2SB649A |
| Q112 | 8-729-201-05 | s TRANSISTOR 2SC2878-B |
| R1 | 1-247-826-00 | s CARBON 620 5% 1/4W |
| R2 | 1-249-394-11 | s CARBON 12 5% 1/4W |
| R3 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R4 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R5 | 1-249-415-11 | s CARBON 680 5% 1/4W |
| R6 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R7 | 1-249-418-11 | s CARBON 1.2K 5% 1/4W |
| R8 | 1-249-427-11 | s CARBON 6.8K 5% 1/4W |
| R10 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R11 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R12 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R13 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R14 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R15 | 1-249-393-11 | s CARBON 10 5% 1/4W |
| R16 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R17 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R18 | 1-249-478-11 | s CARBON 2.2 5% 1/2W |
| R19 | 1-249-478-11 | s CARBON 2.2 5% 1/2W |
| R20 | 1-249-389-11 | s CARBON 4.7 5% 1/4W |
| R21 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R101 | 1-247-826-00 | s CARBON 620 5% 1/4W |
| R102 | 1-249-394-11 | s CARBON 12 5% 1/4W |
| R103 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R104 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R105 | 1-249-415-11 | s CARBON 680 5% 1/4W |
| R106 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R107 | 1-249-418-11 | s CARBON 1.2K 5% 1/4W |
| R108 | 1-249-427-11 | s CARBON 6.8K 5% 1/4W |
| R110 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R111 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R112 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R113 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R114 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R115 | 1-249-393-11 | s CARBON 10 5% 1/4W |
| R116 | 1-249-417-11 | s CARBON 1K 5% 1/4W |

(AA-16 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-----------------------------|
| R117 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R118 | 1-249-478-11 | s CARBON 2.2 5% 1/2W |
| R119 | 1-249-478-11 | s CARBON 2.2 5% 1/2W |
| R120 | 1-249-389-11 | s CARBON 4.7 5% 1/4W |
| R121 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R150 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| T1 | 1-423-261-11 | s TRANSFORMER, INPUT |
| T10 | 1-427-586-11 | s TRANSFORMER, INPUT/OUTPUT |
| T101 | 1-423-261-11 | s TRANSFORMER, INPUT |
| T110 | 1-427-586-11 | s TRANSFORMER, INPUT/OUTPUT |

AC-89 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|---------------|--------------------------------|
| 1pc | △1-622-786-11 | o PRINTED CIRCUIT BOARD, AC-89 |
| C1 | 1-136-211-00 | s FILM 0.022uF 20% 250V |
| C2 | 1-136-185-00 | s FILM 0.22uF 20% 250V |
| CN1 | △1-506-371-00 | o CONNECTOR, 2P, MALE |
| F1 | △1-533-189-11 | o HOLDER, FUSE |
| L1 | 1-421-556-21 | s FILTER, LINE |
| R1 | 1-214-937-00 | s METAL 1M 1% 1/2W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

AU-127 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------------|
| 1pc | A-7061-778-A | o MOUNTED CIRCUIT BOARD, AU-127 |
| 1pc | 7-682-903-01 | s SCREW +PWH 3X5 |
| C1 | 1-124-360-00 | s ELECT 1000uF 20% 16V |
| C2 | 1-126-233-11 | s ELECT 22uF 20% 50V |
| C3 | 1-126-103-11 | s ELECT 470uF 20% 16V |
| C101 | 1-130-471-00 | s MYLAR 0.001uF 5% 50V |
| C102 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C103 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C104 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C105 | 1-161-051-00 | s CERAMIC 0.01uF 10% 50V |
| C113 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C115 | 1-107-202-00 | s MICA 10PF 5% 500V |
| C116 | 1-161-051-00 | s CERAMIC 0.01uF 10% 50V |
| C119 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C120 | 1-161-055-00 | s CERAMIC 0.022uF 10% 50V |
| C121 | 1-161-055-00 | s CERAMIC 0.022uF 10% 50V |
| C201 | 1-130-471-00 | s MYLAR 0.001uF 5% 50V |
| C202 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C203 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C204 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C205 | 1-161-051-00 | s CERAMIC 0.01uF 10% 50V |
| C213 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C215 | 1-107-202-00 | s MICA 10PF 5% 500V |
| C216 | 1-161-051-00 | s CERAMIC 0.01uF 10% 50V |
| C219 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C220 | 1-161-055-00 | s CERAMIC 0.022uF 10% 50V |
| C221 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C301 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C303 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C304 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C305 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C359 | 1-161-021-11 | s CERAMIC 0.047uF 10% 25V |
| C364 | 1-107-202-00 | s MICA 10PF 5% 500V |
| C401 | 1-161-051-00 | s CERAMIC 0.01uF 10% 50V |
| C402 | 1-124-927-11 | s ELECT 4.7uF 20% 100V |
| C405 | 1-107-202-00 | s MICA 10PF 5% 500V |
| C406 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C407 | 1-161-021-11 | s CERAMIC 0.047uF 10% 25V |
| C501 | 1-161-051-00 | s CERAMIC 0.01uF 10% 50V |
| C502 | 1-124-927-11 | s ELECT 4.7uF 20% 100V |
| C505 | 1-107-208-00 | s MICA 18PF 5% 500V |
| C506 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C507 | 1-161-021-11 | s CERAMIC 0.047uF 10% 25V |
| C604 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C704 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| C804 | 1-130-497-00 | s MYLAR 0.15uF 5% 50V |
| C904 | 1-130-497-00 | s MYLAR 0.15uF 5% 50V |
| C909 | 1-123-875-11 | s ELECT 10uF 20% 50V |
| CN208 | 1-506-471-11 | s CONNECTOR, 6P, MALE |
| CN211 | 1-506-471-11 | s CONNECTOR, 6P, MALE |
| D1 | 8-719-109-93 | s DIODE RD6.2ES-B2 |
| D2 | 8-719-109-57 | s DIODE RD2.4ES-B2 |
| D4 | 8-719-200-02 | s DIODE 10E2 |
| D5 | 8-719-200-02 | s DIODE 10E2 |
| D8 | 8-719-200-02 | s DIODE 10E2 |
| D9 | 8-719-200-02 | s DIODE 10E2 |
| D11 | 8-719-911-19 | s DIODE 1SS119 |

(AU-127 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--------------------------|
| D101 | 8-719-911-19 | s DIODE 1SS119 |
| D102 | 8-719-109-93 | s DIODE RD6.2ES-B2 |
| D103 | 8-719-911-19 | s DIODE 1SS119 |
| D104 | 8-719-911-19 | s DIODE 1SS119 |
| D106 | 8-719-911-19 | s DIODE 1SS119 |
| D107 | 8-719-109-93 | s DIODE RD6.2ES-B2 |
| D201 | 8-719-911-19 | s DIODE 1SS119 |
| D202 | 8-719-109-93 | s DIODE RD6.2ES-B2 |
| D203 | 8-719-911-19 | s DIODE 1SS119 |
| D204 | 8-719-911-19 | s DIODE 1SS119 |
| D206 | 8-719-911-19 | s DIODE 1SS119 |
| D207 | 8-719-109-93 | s DIODE RD6.2ES-B2 |
| D351 | 8-719-911-19 | s DIODE 1SS119 |
| D352 | 8-719-911-19 | s DIODE 1SS119 |
| D354 | 8-719-911-19 | s DIODE 1SS119 |
| D401 | 8-719-109-93 | s DIODE RD6.2ES-B2 |
| D402 | 8-719-911-19 | s DIODE 1SS119 |
| D403 | 8-719-911-19 | s DIODE 1SS119 |
| D404 | 8-719-911-19 | s DIODE 1SS119 |
| D405 | 8-719-911-19 | s DIODE 1SS119 |
| D501 | 8-719-109-93 | s DIODE RD6.2ES-B2 |
| D502 | 8-719-911-19 | s DIODE 1SS119 |
| D503 | 8-719-911-19 | s DIODE 1SS119 |
| D504 | 8-719-911-19 | s DIODE 1SS119 |
| D505 | 8-719-911-19 | s DIODE 1SS119 |
| D601 | 8-719-911-19 | s DIODE 1SS119 |
| D602 | 8-719-911-19 | s DIODE 1SS119 |
| D701 | 8-719-911-19 | s DIODE 1SS119 |
| D702 | 8-719-911-19 | s DIODE 1SS119 |
| IC101 | 8-759-700-62 | s IC NJM4562D |
| IC102 | 8-759-700-62 | s IC NJM4562D |
| IC103 | 8-759-208-10 | s IC TC4053BPHB |
| IC201 | 8-759-700-62 | s IC NJM4562D |
| IC301 | 8-759-990-82 | s IC TL082CP |
| IC302 | 8-759-208-08 | s IC TC4052BPHB |
| IC351 | 8-759-700-62 | s IC NJM4562D |
| IC401 | 8-759-700-62 | s IC NJM4562D |
| IC501 | 8-759-700-62 | s IC NJM4562D |
| IC601 | 8-759-208-08 | s IC TC4052BPHB |
| IC602 | 8-759-208-10 | s IC TC4053BPHB |
| IC603 | 8-759-700-62 | s IC NJM4562D |
| IC801 | 8-759-802-46 | s IC LA4550 |
| L101 | 1-407-519-00 | s INDUCTOR |
| L201 | 1-407-519-00 | s INDUCTOR |
| Q1 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q2 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q3 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q4 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q5 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q101 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q102 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q103 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q104 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q201 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q202 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q203 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q204 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q351 | 8-729-201-05 | s TRANSISTOR 2SC2878-B |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(AU-127 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------------|------------------------|
| Q352 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q401 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q402 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q403 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q501 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q502 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q503 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q601 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q602 | 8-729-119-78 s | TRANSISTOR 2SC2785-HFE |
| Q701 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q702 | 8-729-119-78 s | TRANSISTOR 2SC2785-HFE |
| Q801 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q802 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q803 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q901 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q902 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q903 | 8-729-201-05 s | TRANSISTOR 2SC2878-B |
| Q904 | 8-729-119-78 s | TRANSISTOR 2SC2785-HFE |
| R1 | 1-249-428-11 s | CARBON 8.2K 5% 1/4W |
| R2 | 1-249-417-11 s | CARBON 1K 5% 1/4W |
| R3 | 1-249-429-11 s | CARBON 10K 5% 1/4W |
| R4 | 1-249-405-11 s | CARBON 100 5% 1/4W |
| R5 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R6 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R7 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R8 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R9 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R10 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R11 | 1-249-441-11 s | CARBON 100K 5% 1/4W |
| R12 | 1-249-441-11 s | CARBON 100K 5% 1/4W |
| R13 | 1-249-441-11 s | CARBON 100K 5% 1/4W |
| R14 | 1-249-401-11 s | CARBON 47 5% 1/4W |
| R101 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R102 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R103 | 1-249-425-11 s | CARBON 4.7K 5% 1/4W |
| R104 | 1-247-891-00 s | CARBON 330K 5% 1/4W |
| R105 | 1-249-417-11 s | CARBON 1K 5% 1/4W |
| R106 | 1-249-429-11 s | CARBON 10K 5% 1/4W |
| R107 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R108 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R109 | 1-249-429-11 s | CARBON 10K 5% 1/4W |
| R110 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R111 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R112 | 1-249-429-11 s | CARBON 10K 5% 1/4W |
| R113 | 1-249-401-11 s | CARBON 47 5% 1/4W |
| R114 | 1-247-887-00 s | CARBON 220K 5% 1/4W |
| R115 | 1-249-405-11 s | CARBON 100 5% 1/4W |
| R116 | 1-249-405-11 s | CARBON 100 5% 1/4W |
| R117 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R118 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R119 | 1-249-417-11 s | CARBON 1K 5% 1/4W |
| R120 | 1-249-441-11 s | CARBON 100K 5% 1/4W |
| R121 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R122 | 1-249-421-11 s | CARBON 2.2K 5% 1/4W |
| R123 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R124 | 1-249-417-11 s | CARBON 1K 5% 1/4W |
| R127 | 1-249-405-11 s | CARBON 100 5% 1/4W |
| R128 | 1-249-437-11 s | CARBON 47K 5% 1/4W |

(AU-127 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------------|---------------------|
| R129 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R201 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R202 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R203 | 1-249-425-11 s | CARBON 4.7K 5% 1/4W |
| R204 | 1-247-891-00 s | CARBON 330K 5% 1/4W |
| R205 | 1-249-417-11 s | CARBON 1K 5% 1/4W |
| R206 | 1-249-429-11 s | CARBON 10K 5% 1/4W |
| R207 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R208 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R209 | 1-249-429-11 s | CARBON 10K 5% 1/4W |
| R210 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R211 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R212 | 1-249-429-11 s | CARBON 10K 5% 1/4W |
| R213 | 1-249-401-11 s | CARBON 47 5% 1/4W |
| R214 | 1-247-887-00 s | CARBON 220K 5% 1/4W |
| R215 | 1-249-405-11 s | CARBON 100 5% 1/4W |
| R216 | 1-249-405-11 s | CARBON 100 5% 1/4W |
| R217 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R219 | 1-249-417-11 s | CARBON 1K 5% 1/4W |
| R220 | 1-249-441-11 s | CARBON 100K 5% 1/4W |
| R221 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R222 | 1-249-421-11 s | CARBON 2.2K 5% 1/4W |
| R223 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R224 | 1-249-417-11 s | CARBON 1K 5% 1/4W |
| R227 | 1-249-405-11 s | CARBON 100 5% 1/4W |
| R228 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R301 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R302 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R303 | 1-249-405-11 s | CARBON 100 5% 1/4W |
| R305 | 1-249-425-11 s | CARBON 4.7K 5% 1/4W |
| R306 | 1-249-429-11 s | CARBON 10K 5% 1/4W |
| R307 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R308 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R309 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R311 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R312 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R313 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R314 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R315 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R351 | 1-249-421-11 s | CARBON 2.2K 5% 1/4W |
| R352 | 1-249-441-11 s | CARBON 100K 5% 1/4W |
| R353 | 1-249-421-11 s | CARBON 2.2K 5% 1/4W |
| R354 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R355 | 1-249-385-11 s | CARBON 2.2 5% 1/4W |
| R356 | 1-249-434-11 s | CARBON 27K 5% 1/4W |
| R358 | 1-249-429-11 s | CARBON 10K 5% 1/4W |
| R359 | 1-249-425-11 s | CARBON 4.7K 5% 1/4W |
| R360 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R361 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R362 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R364 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R365 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R366 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R367 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R370 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R371 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R372 | 1-249-437-11 s | CARBON 47K 5% 1/4W |
| R373 | 1-249-433-11 s | CARBON 22K 5% 1/4W |
| R374 | 1-249-437-11 s | CARBON 47K 5% 1/4W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(AU-127 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-----------------------|
| R375 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R376 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R377 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R378 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R379 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R380 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R401 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R402 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R404 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R405 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R406 | 1-249-422-11 | s CARBON 2.7K 5% 1/4W |
| R407 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R409 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R410 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R411 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R412 | 1-249-422-11 | s CARBON 2.7K 5% 1/4W |
| R413 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R414 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R415 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R416 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R417 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R418 | 1-249-431-11 | s CARBON 15K 5% 1/4W |
| R501 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R502 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R504 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R505 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R506 | 1-249-422-11 | s CARBON 2.7K 5% 1/4W |
| R507 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R509 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R510 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R511 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R512 | 1-249-422-11 | s CARBON 2.7K 5% 1/4W |
| R513 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R514 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R515 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R516 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R517 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R601 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R602 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R603 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R604 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R605 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R606 | 1-249-419-11 | s CARBON 1.5K 5% 1/4W |
| R607 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R608 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R609 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R610 | 1-249-411-11 | s CARBON 330 5% 1/4W |
| R611 | 1-249-389-11 | s CARBON 4.7 5% 1/4W |
| R701 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R702 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R703 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R704 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R705 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R706 | 1-249-419-11 | s CARBON 1.5K 5% 1/4W |
| R707 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R708 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R709 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R710 | 1-249-411-11 | s CARBON 330 5% 1/4W |
| R711 | 1-249-389-11 | s CARBON 4.7 5% 1/4W |

(AU-127 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|------------------------|
| R801 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R802 | 1-249-439-11 | s CARBON 68K 5% 1/4W |
| R803 | 1-249-419-11 | s CARBON 1.5K 5% 1/4W |
| R804 | 1-249-407-11 | s CARBON 150 5% 1/4W |
| R805 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R806 | 1-249-389-11 | s CARBON 4.7 5% 1/4W |
| R807 | 1-249-415-11 | s CARBON 680 5% 1/4W |
| R808 | 1-249-389-11 | s CARBON 4.7 5% 1/4W |
| R809 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R811 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R812 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R901 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R902 | 1-249-439-11 | s CARBON 68K 5% 1/4W |
| R903 | 1-249-419-11 | s CARBON 1.5K 5% 1/4W |
| R904 | 1-249-407-11 | s CARBON 150 5% 1/4W |
| R905 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R906 | 1-249-389-11 | s CARBON 4.7 5% 1/4W |
| R907 | 1-249-415-11 | s CARBON 680 5% 1/4W |
| R908 | 1-249-389-11 | s CARBON 4.7 5% 1/4W |
| R909 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R911 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R912 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R913 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R914 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R915 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R916 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| RV101 | 1-228-996-00 | s RES, ADJ, METAL 47K |
| RV201 | 1-228-996-00 | s RES, ADJ, METAL 47K |
| RV301 | 1-228-995-00 | s RES, ADJ, METAL 22K |
| RV302 | 1-228-995-00 | s RES, ADJ, METAL 22K |
| RV351 | 1-228-996-00 | s RES, ADJ, METAL 47K |
| RV401 | 1-228-993-00 | s RES, ADJ, METAL 4.7K |
| RV501 | 1-228-993-00 | s RES, ADJ, METAL 4.7K |
| RV601 | 1-228-990-00 | s RES, ADJ, METAL 1K |
| RV701 | 1-228-990-00 | s RES, ADJ, METAL 1K |

CP-141 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------------|
| 1pc | 1-631-807-11 | o PRINTED CIRCUIT BOARD, CP-141 |
| R001 | 1-215-392-00 | s METAL 62 1% 1/6W |
| R002 | 1-247-804-11 | s CARBON 75 5% 1/4W |
| R003 | 1-215-376-00 | s METAL 13 1% 1/6W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

CP-162 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------------|
| 1pc | 1-635-085-11 | o PRINTED CIRCUIT BOARD, CP-162 |
| CN1007 | 1-566-850-31 | s CONNECTOR, (S) TERMINAL 4P |
| CN1008 | 1-566-850-31 | s CONNECTOR, (S) TERMINAL 4P |

DC-45A BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|---------------|---------------------------------|
| 1pc | A-7062-150-A | o MOUNTED CIRCUIT BOARD, DC-45A |
| 2pcs | 1-533-189-11 | o HOLDER, FUSE |
| 2pcs | 2-371-561-00 | s BUSHING (P), INSULATING |
| 2pcs | 3-703-037-00 | s INSULATOR, TO-220 |
| 4pcs | 3-718-718-02 | o HEAT SINK (A) |
| 4pcs | 7-621-759-65 | s +PSW, 2.6X8 |
| 2pcs | 7-682-903-01 | s SCREW +PWH 3X5 |
| C2 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C4 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C6 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C8 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C11 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C13 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C14 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C16 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C18 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C21 | 1-125-579-11 | s DOUBLE LAYERS 0.1 FARAD 5.5V |
| C100 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| CP1 | 1-464-978-11 | s CONVERTER DC-DC (CD-86) |
| D1 | 8-719-110-17 | s DIODE RD10ES-B2 |
| D2 | 8-719-911-55 | s DIODE U05G |
| D3 | 8-719-911-55 | s DIODE U05G |
| D4 | 8-719-911-55 | s DIODE U05G |
| D5 | 8-719-911-55 | s DIODE U05G |
| F2 | △1-532-286-00 | s FUSE, TIMELAG 2.5A 250V |
| IC1 | 8-759-982-10 | s IC RC7809FA |
| IC2 | 8-759-982-05 | s IC RC7805FA |
| IC3 | 8-759-135-80 | s IC UPC358C |
| L1 | 1-410-087-31 | s INDUCTOR 10mH |
| L2 | 1-410-064-11 | s INDUCTOR 2.7mH |
| PS1 | △1-532-844-21 | s LINK, IC 3.15A |
| PS3 | △1-532-844-21 | s LINK, IC 3.15A |
| PS4 | △1-532-838-21 | s LINK, IC 0.8A |
| PS5 | △1-532-841-21 | s LINK, IC 1.6A |
| Q1 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q2 | 8-729-385-82 | s TRANSISTOR 2SB858-C |
| Q3 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q4 | 8-729-900-65 | s TRANSISTOR DTA144ES |
| Q5 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q6 | 8-729-382-64 | s TRANSISTOR 2SC1826-G |
| Q7 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| R1 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R2 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R3 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R4 | 1-249-408-11 | s CARBON 180 5% 1/4W |
| R5 | 1-249-427-11 | s CARBON 6.8K 5% 1/4W |
| R6 | 1-249-420-11 | s CARBON 1.8K 5% 1/4W |
| R7 | 1-215-444-00 | s METAL 9.1K 1% 1/6W |
| R8 | 1-215-443-00 | s METAL 8.2K 1% 1/6W |
| R9 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R10 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R11 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R12 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R13 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R15 | 1-249-405-11 | s CARBON 100 5% 1/4W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(DC-45A BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-----------------------|
| R16 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R17 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R18 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| RV1 | 1-230-496-11 | s RES, ADJ, METAL 10K |

DD-12 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---|
| 1pc | A-7061-772-A | o MOUNTED CIRCUIT BOARD, DD-12 This board includes the DP-101 Board. |

| | | |
|-------|--------------|-----------------------|
| 1pc | 1-535-699-11 | s CABLE, JUMPER 23P |
| D1 | 8-719-911-19 | s DIODE 1SS119 |
| D321 | 8-719-911-19 | s DIODE 1SS119 |
| IC2 | 8-759-645-16 | s IC M54516P |
| IC3 | 8-759-645-16 | s IC M54516P |
| Q308 | 8-729-903-02 | s TRANSISTOR DTA143XS |
| Q309 | 8-729-903-02 | s TRANSISTOR DTA143XS |
| Q310 | 8-729-903-02 | s TRANSISTOR DTA143XS |
| Q311 | 8-729-903-02 | s TRANSISTOR DTA143XS |
| Q312 | 8-729-903-02 | s TRANSISTOR DTA143XS |
| Q313 | 8-729-903-02 | s TRANSISTOR DTA143XS |
| Q314 | 8-729-903-02 | s TRANSISTOR DTA143XS |
| R366 | 1-249-402-11 | s CARBON 56 5% 1/4W |
| R367 | 1-249-402-11 | s CARBON 56 5% 1/4W |
| R368 | 1-249-402-11 | s CARBON 56 5% 1/4W |
| R369 | 1-249-402-11 | s CARBON 56 5% 1/4W |
| R370 | 1-249-402-11 | s CARBON 56 5% 1/4W |
| R371 | 1-249-402-11 | s CARBON 56 5% 1/4W |
| R372 | 1-249-402-11 | s CARBON 56 5% 1/4W |
| S1009 | 1-516-995-00 | s SWITCH, LEVER SLIDE |
| S1010 | 1-552-539-00 | s SWITCH, TACTILE |

DI-12 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-----------------------------------|
| 1pc | A-7062-154-A | o MOUNTED CIRCUIT BOARD, DI-12 |
| C31 | 1-163-103-00 | s CERAMIC, CHIP 27PF 5% 50V |
| C36 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C220 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C221 | 1-164-005-11 | s CERAMIC, CHIP 0.47uF 25V |
| C237 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C246 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C248 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C249 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C250 | 1-164-182-11 | s CERAMIC CHIP 3300PF 10% 100V |
| C252 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C258 | 1-163-098-00 | s CERAMIC, CHIP 16PF 5% 50V |
| C260 | 1-124-638-11 | s ELECT 22uF 20% 10V |
| C263 | 1-162-638-11 | s CERAMIC, CHIP 1uF 16V |
| C266 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C267 | 1-162-638-11 | s CERAMIC, CHIP 1uF 16V |
| C273 | 1-124-638-11 | s ELECT 22uF 20% 10V |
| C277 | 1-124-638-11 | s ELECT 22uF 20% 10V |
| C285 | 1-124-638-11 | s ELECT 22uF 20% 10V |
| C289 | 1-126-176-11 | s ELECT 220uF 20% 10V |
| C290 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C298 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C309 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C319 | 1-164-161-11 | s CERAMIC, CHIP 0.0022uF 10% 100V |
| C322 | 1-124-638-11 | s ELECT 22uF 20% 10V |
| C323 | 1-124-638-11 | s ELECT 22uF 20% 10V |
| C401 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C407 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C408 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C409 | 1-131-361-00 | s TANTALUM 2.2uF 10% 20V |
| C410 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C413 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C419 | 1-164-161-11 | s CERAMIC, CHIP 0.0022uF 10% 100V |
| C422 | 1-131-374-00 | s TANTALUM 33uF 10% 16V |
| C426 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C429 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C430 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C431 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C432 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C433 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C502 | 1-124-638-11 | s ELECT 22uF 20% 10V |
| C507 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C510 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C780 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C782 | 1-164-161-11 | s CERAMIC, CHIP 0.0022uF 10% 100V |
| C783 | 1-163-022-00 | s CERAMIC, CHIP 0.012uF 10% 50V |
| C790 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C791 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C794 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C798 | 1-124-256-00 | s ELECT 1.5uF 20% 50V |
| C799 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C870 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C871 | 1-164-161-11 | s CERAMIC, CHIP 0.0022uF 10% 100V |
| C900 | 1-131-345-00 | s TANTALUM 0.47uF 10% 35V |
| CN655 | 1-506-471-11 | s CONNECTOR, 6P, MALE |
| CN662 | 1-506-471-11 | s CONNECTOR, 6P, MALE |
| CV31 | 1-141-276-00 | s CAP, TRIMMER B |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(DI-12 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-------------------|
| CV301 | 1-141-276-00 | s CAP, TRIMMER B |
| CV302 | 1-141-276-00 | s CAP, TRIMMER B |
| D31 | 8-713-300-88 | s DIODE 1T33C-01 |
| D301 | 8-713-300-88 | s DIODE 1T33C-01 |
| D302 | 8-713-300-88 | s DIODE 1T33C-01 |
| D308 | 8-719-940-45 | s DIODE DWA010 |
| D401 | 8-719-940-45 | s DIODE DWA010 |
| D403 | 8-719-940-45 | s DIODE DWA010 |
| D404 | 8-719-104-10 | s DIODE 1SS99 |
| FL201 | 1-421-927-21 | s FILTER, NOISE |
| IC301 | 8-759-987-17 | s IC CXD1226Q |
| IC302 | 8-759-987-18 | s IC CXD1227Q |
| IC303 | 8-759-987-19 | s IC CXD1228Q |
| IC304 | 8-759-987-20 | s IC CXD1229Q |
| IC305 | 8-752-337-41 | s IC CXK1206M |
| IC306 | 8-752-337-41 | s IC CXK1206M |
| IC307 | 8-752-337-41 | s IC CXK1206M |
| IC308 | 8-752-329-21 | s IC CXD1175M |
| IC309 | 8-752-329-21 | s IC CXD1175M |
| IC310 | 8-752-032-96 | s IC CXA1106M |
| IC311 | 8-752-032-96 | s IC CXA1106M |
| IC312 | 8-759-926-23 | s IC SN74HC163NS |
| IC313 | 8-759-925-85 | s IC SN74HC32NS |
| IC316 | 8-759-206-28 | s IC TC74HC123F |
| IC401 | 8-759-009-07 | s IC MC14053BF |
| IC402 | 8-759-100-93 | s IC UPC393G2 |
| IC403 | 8-759-009-51 | s IC MC14538BF |
| IC404 | 8-759-981-65 | s IC LM2903M |
| IC405 | 8-759-925-80 | s IC SN74HC14NS |
| IC406 | 8-759-925-90 | s IC SN74HC74NS |
| IC410 | 8-759-981-65 | s IC LM2903M |
| IC500 | 8-749-920-71 | s IC SI3522V |
| IC501 | 8-759-011-65 | s IC MC74HC4053F |
| IC780 | 8-759-009-51 | s IC MC14538BF |
| IC781 | 8-759-925-90 | s IC SN74HC74NS |
| IC782 | 8-759-926-20 | s IC SN74HC160NS |
| IC783 | 8-759-925-99 | s IC SN74HC109NS |
| IC790 | 8-759-987-20 | s IC CXD1229Q |
| IC791 | 8-759-908-17 | s IC TL082CPS |
| IC792 | 8-759-925-90 | s IC SN74HC74NS |
| IC850 | 8-759-925-76 | s IC SN74HC08NS |
| IC851 | 8-759-038-15 | s IC MC74HC4538AF |
| IC852 | 8-759-009-51 | s IC MC14538BF |
| IC853 | 8-759-925-90 | s IC SN74HC74NS |
| IC854 | 8-759-929-73 | s IC SN74LS00NS |
| IC855 | 8-759-926-29 | s IC SN74HC175NS |
| L201 | 1-410-482-31 | s INDUCTOR 100uH |
| L202 | 1-410-482-31 | s INDUCTOR 100uH |
| L205 | 1-410-482-31 | s INDUCTOR 100uH |
| L206 | 1-410-482-31 | s INDUCTOR 100uH |
| L211 | 1-410-466-41 | s INDUCTOR 4.7uH |
| L212 | 1-410-478-11 | s INDUCTOR 47uH |
| L214 | 1-410-478-11 | s INDUCTOR 47uH |
| L215 | 1-410-478-11 | s INDUCTOR 47uH |
| L216 | 1-410-478-11 | s INDUCTOR 47uH |
| L223 | 1-410-478-11 | s INDUCTOR 47uH |

(DI-12 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-------------------------------|
| L224 | 1-410-478-11 | s INDUCTOR 47uH |
| L501 | 1-410-478-11 | s INDUCTOR 47uH |
| L502 | 1-410-482-31 | s INDUCTOR 100uH |
| L810 | 1-410-482-31 | s INDUCTOR 100uH |
| L811 | 1-410-482-31 | s INDUCTOR 100uH |
| L812 | 1-410-482-31 | s INDUCTOR 100uH |
| Q31 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q32 | 8-729-140-47 | s TRANSISTOR 2SC3735-B34 |
| Q205 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q210 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q212 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q214 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q224 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q401 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q402 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q403 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q404 | 8-729-216-22 | s TRANSISTOR 2SA1162 |
| Q405 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q406 | 8-729-216-22 | s TRANSISTOR 2SA1162 |
| Q501 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q502 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q629 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q780 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q900 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q901 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| R31 | 1-216-692-11 | s METAL, CHIP 51K 0.5% 1/10W |
| R32 | 1-216-658-11 | s METAL, CHIP 2K 0.5% 1/10W |
| R34 | 1-216-638-11 | s METAL, CHIP 300 0.5% 1/10W |
| R35 | 1-216-653-11 | s METAL, CHIP 1.2K 0.5% 1/10W |
| R36 | 1-216-648-11 | s METAL, CHIP 750 0.5% 1/10W |
| R37 | 1-216-671-11 | s METAL, CHIP 6.8K 0.5% 1/10W |
| R38 | 1-216-686-11 | s METAL, CHIP 30K 0.5% 1/10W |
| R248 | 1-216-675-11 | s METAL, CHIP 10K 0.5% 1/10W |
| R249 | 1-216-675-11 | s METAL, CHIP 10K 0.5% 1/10W |
| R266 | 1-216-648-11 | s METAL, CHIP 750 0.5% 1/10W |
| R407 | 1-216-675-11 | s METAL, CHIP 10K 0.5% 1/10W |
| R409 | 1-216-667-11 | s METAL, CHIP 4.7K 0.5% 1/10W |
| R429 | 1-216-748-11 | s METAL, CHIP 39K 1% 1/10W |
| R440 | 1-216-066-00 | s METAL, CHIP 5.1K 5% 1/10W |
| R470 | 1-216-084-00 | s METAL, CHIP 30K 5% 1/10W |
| R490 | 1-216-675-11 | s METAL, CHIP 10K 0.5% 1/10W |
| R491 | 1-216-674-11 | s METAL, CHIP 9.1K 0.5% 1/10W |
| R496 | 1-247-897-11 | s CARBON 560K 5% 1/4W |
| R501 | 1-216-666-11 | s METAL, CHIP 4.3K 0.5% 1/10W |
| R502 | 1-216-676-11 | s METAL, CHIP 11K 0.5% 1/10W |
| R782 | 1-216-682-11 | s METAL, CHIP 20K 0.5% 1/10W |
| R799 | 1-216-643-11 | s METAL, CHIP 470 0.5% 1/10W |
| R859 | 1-216-689-11 | s METAL, CHIP 39K 0.5% 1/10W |
| R900 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R901 | 1-215-453-00 | s METAL 22K 1% 1/6W |
| R903 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| RV401 | 1-228-994-00 | s RES, ADJ, METAL 10K |
| RV402 | 1-228-994-00 | s RES, ADJ, METAL 10K |
| RV403 | 1-228-996-00 | s RES, ADJ, METAL 47K |
| X31 | 1-577-704-11 | s CRYSTAL 14.21875MHz |
| X301 | 1-567-344-21 | s VCO, CRYSTAL 17.734475MHz |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

DI-13 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------------|
| 1pc | A-7062-155-A | o MOUNTED CIRCUIT BOARD, DI-13 |
| C11 | 1-163-103-00 | s CERAMIC, CHIP 27PF 5% 50V |
| C16 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C21 | 1-163-103-00 | s CERAMIC, CHIP 27PF 5% 50V |
| C26 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C230 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C235 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C236 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C243 | 1-163-127-00 | s CERAMIC, CHIP 270PF 5% 50V |
| C244 | 1-163-139-00 | s CERAMIC, CHIP 820PF 5% 50V |
| C550 | 1-163-099-00 | s CERAMIC, CHIP 18PF 5% 50V |
| C653 | 1-163-110-00 | s CERAMIC, CHIP 51PF 5% 50V |
| C654 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C655 | 1-126-103-11 | s ELECT 470uF 20% 16V |
| C656 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C658 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C660 | 1-163-110-00 | s CERAMIC, CHIP 51PF 5% 50V |
| C663 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C664 | 1-126-103-11 | s ELECT 470uF 20% 16V |
| C701 | 1-126-176-11 | s ELECT 220uF 20% 10V |
| C702 | 1-126-176-11 | s ELECT 220uF 20% 10V |
| C703 | 1-126-176-11 | s ELECT 220uF 20% 10V |
| C704 | 1-126-176-11 | s ELECT 220uF 20% 10V |
| C711 | 1-163-112-00 | s CERAMIC, CHIP 62PF 5% 50V |
| C713 | 1-163-112-00 | s CERAMIC, CHIP 62PF 5% 50V |
| C715 | 1-131-341-00 | s TANTALUM 0.1uF 10% 35V |
| C730 | 1-126-094-11 | s ELECT 4.7uF 20% 35V |
| C751 | 1-131-347-00 | s TANTALUM 1uF 10% 35V |
| C752 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C753 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C754 | 1-126-233-11 | s ELECT 22uF 20% 50V |
| C755 | 1-126-233-11 | s ELECT 22uF 20% 50V |
| C761 | 1-163-011-11 | s CERAMIC 0.0015uF 10% 50V |
| C762 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| CN652 | 1-506-471-11 | s CONNECTOR, 6P, MALE |
| CN672 | 1-506-471-11 | s CONNECTOR, 6P, MALE |
| CV11 | 1-141-227-00 | s CAP, TRIMMER 20PF |
| CV21 | 1-141-227-00 | s CAP, TRIMMER 20PF |
| D11 | 8-713-300-88 | s DIODE 1T33C-01 |
| D21 | 8-713-300-88 | s DIODE 1T33C-01 |
| D701 | 8-719-800-76 | s DIODE 1SS226 |
| D702 | 8-719-800-76 | s DIODE 1SS226 |
| FL651 | 1-235-759-11 | s FILTER, LOW-PASS |
| FL652 | 1-235-181-00 | s FILTER, BANDPASS 4.43MHZ |
| IC710 | 8-741-104-00 | s IC BX1040 |
| IC711 | 8-759-101-12 | s IC UPC311G2 |
| IC720 | 8-752-335-47 | s IC CXD1216M |
| IC740 | 8-752-332-67 | s IC CXD1217M |
| IC750 | 8-759-206-28 | s IC TC74HC123F |
| IC751 | 8-759-009-07 | s IC MC14053BF |
| IC752 | 8-759-906-53 | s IC TL062CPS |
| IC770 | 8-759-926-56 | s IC SN74HC273NS |
| IC771 | 8-759-926-56 | s IC SN74HC273NS |
| IC772 | 8-759-926-56 | s IC SN74HC273NS |
| IC774 | 8-759-926-56 | s IC SN74HC273NS |
| IC775 | 8-759-926-56 | s IC SN74HC273NS |

(DI-13 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-------------------------------|
| IC800 | 8-759-982-25 | s IC RC78L09A |
| L204 | 1-410-482-31 | s INDUCTOR 100uH |
| L551 | 1-410-482-31 | s INDUCTOR 100uH |
| L653 | 1-410-482-31 | s INDUCTOR 100uH |
| L654 | 1-410-482-31 | s INDUCTOR 100uH |
| L801 | 1-410-482-31 | s INDUCTOR 100uH |
| L802 | 1-410-482-31 | s INDUCTOR 100uH |
| L803 | 1-410-482-31 | s INDUCTOR 100uH |
| L804 | 1-410-482-31 | s INDUCTOR 100uH |
| L805 | 1-410-482-31 | s INDUCTOR 100uH |
| L806 | 1-410-482-31 | s INDUCTOR 100uH |
| L807 | 1-410-482-31 | s INDUCTOR 100uH |
| L808 | 1-410-482-31 | s INDUCTOR 100uH |
| L809 | 1-410-482-31 | s INDUCTOR 100uH |
| Q11 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q12 | 8-729-140-47 | s TRANSISTOR 2SC3735-B34 |
| Q21 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q22 | 8-729-140-47 | s TRANSISTOR 2SC3735-B34 |
| Q203 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q204 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q206 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q207 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q208 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q209 | 8-729-216-22 | s TRANSISTOR 2SA1162 |
| Q222 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q228 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q229 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q651 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q652 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q653 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q654 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q655 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q656 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q657 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q658 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q659 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q701 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q702 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q710 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q711 | 8-729-109-41 | s TRANSISTOR 2SK94-X1 |
| Q720 | 8-729-109-41 | s TRANSISTOR 2SK94-X1 |
| R11 | 1-216-692-11 | s METAL, CHIP 51K 0.5% 1/10W |
| R12 | 1-216-658-11 | s METAL, CHIP 2K 0.5% 1/10W |
| R14 | 1-216-638-11 | s METAL, CHIP 300 0.5% 1/10W |
| R15 | 1-216-653-11 | s METAL, CHIP 1.2K 0.5% 1/10W |
| R16 | 1-216-648-11 | s METAL, CHIP 750 0.5% 1/10W |
| R17 | 1-216-671-11 | s METAL, CHIP 6.8K 0.5% 1/10W |
| R18 | 1-216-686-11 | s METAL, CHIP 30K 0.5% 1/10W |
| R21 | 1-216-692-11 | s METAL, CHIP 51K 0.5% 1/10W |
| R22 | 1-216-658-11 | s METAL, CHIP 2K 0.5% 1/10W |
| R24 | 1-216-638-11 | s METAL, CHIP 300 0.5% 1/10W |
| R25 | 1-216-653-11 | s METAL, CHIP 1.2K 0.5% 1/10W |
| R26 | 1-216-648-11 | s METAL, CHIP 750 0.5% 1/10W |
| R27 | 1-216-671-11 | s METAL, CHIP 6.8K 0.5% 1/10W |
| R28 | 1-216-686-11 | s METAL, CHIP 30K 0.5% 1/10W |
| R550 | 1-216-651-11 | s METAL, CHIP 1K 0.5% 1/10W |
| R552 | 1-216-650-11 | s METAL, CHIP 910 0.5% 1/10W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(DI-13 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------------|----------------------------|
| R656 | 1-216-651-11 s | METAL, CHIP 1K 0.5% 1/10W |
| R657 | 1-216-676-11 s | METAL, CHIP 11K 0.5% 1/10W |
| R669 | 1-216-651-11 s | METAL, CHIP 1K 0.5% 1/10W |
| R670 | 1-216-651-11 s | METAL, CHIP 1K 0.5% 1/10W |
| R681 | 1-215-422-00 s | METAL 1.1K 1% 1/6W |
| R762 | 1-216-676-11 s | METAL, CHIP 11K 0.5% 1/10W |
| R763 | 1-216-678-11 s | METAL, CHIP 13K 0.5% 1/10W |
| R768 | 1-216-658-11 s | METAL, CHIP 2K 0.5% 1/10W |
| RV201 | 1-228-989-00 s | RES, ADJ, METAL 470 |
| RV202 | 1-228-990-00 s | RES, ADJ, METAL 1K |
| RV651 | 1-228-989-00 s | RES, ADJ, METAL 470 |
| RV652 | 1-228-989-00 s | RES, ADJ, METAL 470 |
| RV750 | 1-228-993-00 s | RES, ADJ, METAL 4.7K |
| X11 | 1-579-056-11 s | CRYSTAL 14.1875MHz |
| X21 | 1-579-057-11 s | CRYSTAL 17.734475MHz |

DP-101 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------|----------------|
|---------------------|----------|----------------|

All of the component parts on DP-101 Board are supplied together with when you order DD-12 Board.

| | | |
|----|----------------|-------------|
| D1 | 8-719-942-19 s | LED LB402VK |
| D2 | 8-719-942-19 s | LED LB402VK |
| D3 | 8-719-942-19 s | LED LB402VK |
| D4 | 8-719-942-19 s | LED LB402VK |

FP-84 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------|----------------|
|---------------------|----------|----------------|

1PC A-7070-624-A s MOUNTED CIRCUIT BOARD, FP-84
All of component parts on the FP-84 Board are supplied together with when you order MD-23 Board.

| | | |
|------|----------------|--|
| W801 | 1-562-880-11 s | CONNECTOR, 15P, FEMALE |
| 1pc | 1-625-649-11 s | PRINTED CIRCUIT BOARD, FP-84 FLEXIBLE |

FP-122 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------|----------------|
|---------------------|----------|----------------|

1pc A-7070-625-A o MOUNTED CIRCUIT BOARD, FP-122
All of the component parts on the FP-122 Board are supplied together with when you order MD-23 Board.

| | | |
|-----|----------------|---|
| 1pc | 1-625-650-11 s | PRINTED CIRCUIT BOARD, FP-122 FLEXIBLE |
|-----|----------------|---|

| | | |
|------|----------------|------------------------|
| W901 | 1-562-880-11 s | CONNECTOR, 15P, FEMALE |
|------|----------------|------------------------|

FP-206 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------|----------------|
|---------------------|----------|----------------|

| | | |
|------|----------------|---|
| 1pc* | 1-630-923-11 o | PRINTED CIRCUIT BOARD, FP-206 FLEXIBLE |
|------|----------------|---|

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

FR-43 BOARD

Ref. No.

or Q'ty Part No. SP Description

1pc A-7062-165-A o MOUNTED CIRCUIT BOARD, FR-43
This board includes RP-73 and RP-103 Boards.

1pc 1-559-763-11 s CABLE, FLAT 26P
1pc 3-739-102-01 o LID (H), UPPER, FR SHIELD CASE

C005 1-135-091-00 s TANTALUM, CHIP 1uF 10% 16V
C007 1-135-091-00 s TANTALUM, CHIP 1uF 10% 16V
C012 1-135-157-21 s TANTALUM, CHIP 10uF 20% 6.3V
C031 1-135-157-21 s TANTALUM, CHIP 10uF 20% 6.3V
C032 1-164-232-11 s CERAMIC 0.01uF 10% 100V

C033 1-164-232-11 s CERAMIC 0.01uF 10% 100V
C041 1-164-232-11 s CERAMIC 0.01uF 10% 100V
C043 1-135-157-21 s TANTALUM, CHIP 10uF 20% 6.3V
C052 1-135-211-11 s TANTALUM, CHIP 6.8uF 20% 6.3V
C053 1-135-148-21 s TANTALUM, CHIP 1.5uF 10% 16V

C054 1-163-037-11 s CERAMIC, CHIP 0.022uF 10% 25V
C055 1-163-037-11 s CERAMIC, CHIP 0.022uF 10% 25V
C056 1-163-037-11 s CERAMIC, CHIP 0.022uF 10% 25V

CN001 1-562-629-11 s CONNECTOR, 19P, FEMALE
CN002 1-565-209-11 s CONNECTOR, FPC 26P

D001 8-719-400-18 s DIODE 1S2837-T1

IC051 8-759-710-09 s IC NJM2233AM
IC052 8-759-009-07 s IC MC14053BF

L001 1-408-777-00 s INDUCTOR, CHIP 10uH
L031 1-408-777-00 s INDUCTOR, CHIP 10uH
L041 1-408-793-21 s INDUCTOR, CHIP 220uH
L042 1-408-777-00 s INDUCTOR, CHIP 10uH
L051 1-408-785-21 s INDUCTOR, CHIP 47uH

Q001 8-729-202-38 s TRANSISTOR 2SC3326N
Q002 8-729-202-38 s TRANSISTOR 2SC3326N
Q003 8-729-202-38 s TRANSISTOR 2SC3326N
Q004 8-729-202-38 s TRANSISTOR 2SC3326N
Q005 8-729-901-05 s TRANSISTOR DTA124EK

Q006 8-729-901-05 s TRANSISTOR DTA124EK
Q007 8-729-901-01 s TRANSISTOR DTC144EK
Q008 8-729-901-01 s TRANSISTOR DTC144EK
Q009 8-729-320-17 s TRANSISTOR 2SA1122-CD
Q031 8-729-201-27 s TRANSISTOR 2SC2715-Y

Q032 8-729-102-07 s TRANSISTOR 2SC2223-F13
Q041 8-729-216-22 s TRANSISTOR 2SA1162
Q042 8-729-119-76 s TRANSISTOR 2SA1115P
Q043 8-729-320-17 s TRANSISTOR 2SA1122-CD

R018 1-216-695-11 s METAL, CHIP 68K 0.5% 1/10W

RV1 1-230-871-11 s RES, ADJ, METAL 22K
RV2 1-230-871-11 s RES, ADJ, METAL 22K

HK-5 BOARD

Ref. No.

or Q'ty Part No. SP Description

1pc A-7062-164-A o MOUNTED CIRCUIT BOARD, HK-5
1pc 3-531-576-01 s RIVET
1pc 3-724-107-01 o RETAINER, PC BOARD

C101 1-135-166-21 s TANTALUM, CHIP 47uF 10% 10V
C104 1-163-011-11 s CERAMIC 0.0015uF 10% 50V
C106 1-163-127-00 s CERAMIC, CHIP 270PF 5% 50V
C111 1-163-115-00 s CERAMIC, CHIP 82PF 5% 50V
C112 1-163-111-00 s CERAMIC, CHIP 56PF 5% 50V

C116 1-135-070-00 s TANTALUM, CHIP 0.1uF 10% 35V
C118 1-163-090-00 s CERAMIC, CHIP 7PF 50V
C122 1-107-042-00 s MICA 2.2PF 500V
C124 1-163-103-00 s CERAMIC, CHIP 27PF 5% 50V
C135 1-163-090-00 s CERAMIC, CHIP 7PF 50V

C136 1-163-099-00 s CERAMIC, CHIP 18PF 5% 50V
C143 1-135-145-11 s TANTALUM, CHIP 0.47uF 10% 35V
C149 1-107-206-00 s MICA 15PF 5% 500V
C181 1-102-074-00 s CERAMIC 0.001uF 10% 50V
C184 1-107-077-00 s MICA 47PF 5% 50V

C201 1-135-166-21 s TANTALUM, CHIP 47uF 10% 10V
C210 1-163-106-00 s CERAMIC, CHIP 36PF 5% 50V
C212 1-135-211-11 s TANTALUM, CHIP 6.8uF 20% 6.3V
C302 1-135-166-21 s TANTALUM, CHIP 47uF 10% 10V
C303 1-163-095-00 s CERAMIC, CHIP 12PF 5% 50V

C304 1-163-099-00 s CERAMIC, CHIP 18PF 5% 50V
C308 1-135-166-21 s TANTALUM, CHIP 47uF 10% 10V
C313 1-135-166-21 s TANTALUM, CHIP 47uF 10% 10V
C314 1-163-241-11 s CERAMIC, CHIP 39PF 5% 50V
C316 1-163-241-11 s CERAMIC, CHIP 39PF 5% 50V

C317 1-163-111-00 s CERAMIC, CHIP 56PF 5% 50V
C318 1-162-721-11 s CERAMIC 300PF 1% 50V
C323 1-163-012-00 s CERAMIC CHIP 1800PF 10% 50V
C325 1-135-156-21 s TANTALUM, CHIP 6.8uF 10% 10V
C327 1-135-156-21 s TANTALUM, CHIP 6.8uF 10% 10V

C329 1-135-166-21 s TANTALUM, CHIP 47uF 10% 10V
C331 1-135-156-21 s TANTALUM, CHIP 6.8uF 10% 10V
C332 1-135-155-21 s TANTAL CHIP 4.7uF 10% 16V
C334 1-135-155-21 s TANTAL CHIP 4.7uF 10% 16V
C340 1-135-072-21 s TANTALUM, CHIP 0.22uF 10% 35V

C341 1-135-161-21 s TANTALUM, CHIP 22uF 10% 10V
C342 1-135-166-21 s TANTALUM, CHIP 47uF 10% 10V
C345 1-163-134-00 s CERAMIC, CHIP 510PF 5% 50V
C348 1-135-166-21 s TANTALUM, CHIP 47uF 10% 10V
C349 1-135-177-21 s TANTALUM, CHIP 1uF 10% 25V

C350 1-131-367-00 s TANTALUM 22uF 10% 20V
C402 1-124-968-11 s ELECT, NONPOLAR 22uF 20% 6.3V
C403 1-163-106-00 s CERAMIC, CHIP 36PF 5% 50V
C404 1-163-111-00 s CERAMIC, CHIP 56PF 5% 50V
C405 1-163-099-00 s CERAMIC, CHIP 18PF 5% 50V

C407 1-135-149-21 s TANTALUM, CHIP 2.2uF 10% 10V
C409 1-164-232-11 s CERAMIC 0.01uF 10% 100V
C411 1-163-088-00 s CERAMIC, CHIP 5PF 50V
C412 1-135-156-21 s TANTALUM, CHIP 6.8uF 10% 10V
C414 1-164-232-11 s CERAMIC 0.01uF 10% 100V

C416 1-164-232-11 s CERAMIC 0.01uF 10% 100V
C417 1-162-722-11 s CERAMIC 330PF 1% 50V
C418 1-162-724-11 s CERAMIC 390PF 1% 50V
C419 1-162-721-11 s CERAMIC 300PF 1% 50V
C420 1-135-156-21 s TANTALUM, CHIP 6.8uF 10% 10V

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(HK-5 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------------|
| C424 | 1-135-155-21 | s TANTAL CHIP 4.7uF 10% 16V |
| C427 | 1-135-161-21 | s TANTALUM, CHIP 22uF 10% 10V |
| C428 | 1-135-161-21 | s TANTALUM, CHIP 22uF 10% 10V |
| C429 | 1-135-161-21 | s TANTALUM, CHIP 22uF 10% 10V |
| C501 | 1-135-166-21 | s TANTALUM, CHIP 47uF 10% 10V |
| C505 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C508 | 1-163-111-00 | s CERAMIC, CHIP 56PF 5% 50V |
| C509 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C510 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C511 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C512 | 1-135-149-21 | s TANTALUM, CHIP 2.2uF 10% 10V |
| C516 | 1-135-155-21 | s TANTAL CHIP 4.7uF 10% 16V |
| C519 | 1-135-149-21 | s TANTALUM, CHIP 2.2uF 10% 10V |
| C520 | 1-163-111-00 | s CERAMIC, CHIP 56PF 5% 50V |
| C521 | 1-163-103-00 | s CERAMIC, CHIP 27PF 5% 50V |
| C523 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C526 | 1-135-161-21 | s TANTALUM, CHIP 22uF 10% 10V |
| C527 | 1-135-161-21 | s TANTALUM, CHIP 22uF 10% 10V |
| C531 | 1-135-161-21 | s TANTALUM, CHIP 22uF 10% 10V |
| C532 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C601 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C607 | 1-135-070-00 | s TANTALUM, CHIP 0.1uF 10% 35V |
| C609 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C613 | 1-135-073-00 | s TANTALUM, CHIP 0.33uF 10% 35V |
| C614 | 1-163-098-00 | s CERAMIC, CHIP 16PF 5% 50V |
| C616 | 1-163-108-00 | s CERAMIC, CHIP 43PF 5% 50V |
| C620 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C621 | 1-135-155-21 | s TANTAL CHIP 4.7uF 10% 16V |
| C622 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C623 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C627 | 1-135-149-21 | s TANTALUM, CHIP 2.2uF 10% 10V |
| C630 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C631 | 1-135-072-21 | s TANTALUM, CHIP 0.22uF 10% 35V |
| C632 | 1-135-149-21 | s TANTALUM, CHIP 2.2uF 10% 10V |
| C633 | 1-163-833-00 | s CERAMIC, CHIP 0.068uF 25V |
| C634 | 1-135-149-21 | s TANTALUM, CHIP 2.2uF 10% 10V |
| C635 | 1-164-182-11 | s CERAMIC CHIP 3300PF 10% 100V |
| C637 | 1-135-149-21 | s TANTALUM, CHIP 2.2uF 10% 10V |
| C644 | 1-163-115-00 | s CERAMIC, CHIP 82PF 5% 50V |
| C645 | 1-163-111-00 | s CERAMIC, CHIP 56PF 5% 50V |
| C646 | 1-163-119-00 | s CERAMIC, CHIP 120PF 5% 50V |
| C652 | 1-135-149-21 | s TANTALUM, CHIP 2.2uF 10% 10V |
| C659 | 1-163-111-00 | s CERAMIC, CHIP 56PF 5% 50V |
| C660 | 1-163-011-11 | s CERAMIC 0.0015uF 10% 50V |
| C666 | 1-163-011-11 | s CERAMIC 0.0015uF 10% 50V |
| C667 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C668 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C671 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C675 | 1-163-088-00 | s CERAMIC, CHIP 5PF 50V |
| C702 | 1-163-136-00 | s CERAMIC, CHIP 620PF 5% 50V |
| C704 | 1-163-120-00 | s CERAMIC, CHIP 130PF 5% 50V |
| C705 | 1-163-122-00 | s CERAMIC 160PF 5% 50V |
| C706 | 1-163-122-00 | s CERAMIC 160PF 5% 50V |
| C718 | 1-135-161-21 | s TANTALUM, CHIP 22uF 10% 10V |
| C720 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C721 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C722 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C723 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C724 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |

(HK-5 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------------|
| C725 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C726 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C727 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C728 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C731 | 1-163-241-11 | s CERAMIC, CHIP 39PF 5% 50V |
| C732 | 1-163-099-00 | s CERAMIC, CHIP 18PF 5% 50V |
| C802 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C803 | 1-135-161-21 | s TANTALUM, CHIP 22uF 10% 10V |
| C804 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C805 | 1-163-118-00 | s CERAMIC, CHIP 110PF 5% 50V |
| C807 | 1-163-088-00 | s CERAMIC, CHIP 5PF 50V |
| C809 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C812 | 1-135-079-21 | s TANTALUM, CHIP 3.3uF 10% 35V |
| C815 | 1-135-153-21 | s TANTALUM, CHIP 2.2uF 20% 25V |
| C819 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C825 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C905 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C907 | 1-135-166-21 | s TANTALUM, CHIP 47uF 10% 10V |
| CN101 | 1-566-943-11 | s CONNECTOR, BOARD TO BOARD 18P |
| CN102 | 1-566-943-11 | s CONNECTOR, BOARD TO BOARD 18P |
| CV601 | 1-141-311-11 | s CAR, TRIMMER 20PF |
| D101 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D102 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D105 | 8-719-800-76 | s DIODE 1SS226 |
| D106 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D107 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D108 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D109 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D301 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D302 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D401 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D402 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D403 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D404 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D405 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D501 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D601 | 8-719-800-76 | s DIODE 1SS226 |
| D602 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D603 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D604 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D605 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D801 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D802 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D804 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D821 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D822 | 8-719-800-76 | s DIODE 1SS226 |
| D823 | 8-719-800-76 | s DIODE 1SS226 |
| D901 | 8-719-400-18 | s DIODE 1S2837-T1 |
| DL501 | 1-415-517-21 | s DELAY LINE 1H/2H |
| DL700 | 1-415-154-00 | s DELAY LINE 35nS |
| FL301 | 1-236-370-11 | s FILTER, LOW-PASS |
| FL401 | 1-415-761-11 | s DELAY LINE |
| FL402 | 1-415-760-11 | s DELAY LINE |
| FL801 | 1-235-632-11 | s FILTER, BANDPASS 3.7MHZ |
| FL802 | 1-235-633-11 | s FILTER, BANDPASS 5.17MHZ |
| IC101 | 8-759-233-94 | s IC TA8607F |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(HK-5 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|------------------------|
| IC102 | 8-759-925-60 | s IC BA401 |
| IC301 | 8-752-003-00 | s IC CX20030 |
| IC401 | 8-752-031-01 | s IC CXA1047M |
| IC501 | 8-752-003-12 | s IC CX20031 |
| IC601 | 8-759-924-94 | s IC CX22021 |
| IC602 | 8-752-003-22 | s IC CX20032 |
| IC603 | 8-752-305-47 | s IC CX23054 |
| IC604 | 8-759-009-51 | s IC MC14538BF |
| IC702 | 8-759-012-00 | s IC MC10H116M |
| IC703 | 8-752-006-12 | s IC CX20061 |
| IC801 | 8-759-202-67 | s IC CX20117 |
| IC901 | 8-759-925-74 | s IC SN74HC04NS |
| IC902 | 8-759-925-74 | s IC SN74HC04NS |
| L101 | 1-408-974-21 | s INDUCTOR 22uH |
| L102 | 1-410-167-41 | s INDUCTOR, CHIP 820uH |
| L103 | 1-408-792-00 | s INDUCTOR, CHIP 180uH |
| L104 | 1-408-777-00 | s INDUCTOR, CHIP 10uH |
| L105 | 1-408-770-11 | s INDUCTOR, CHIP 2.7uH |
| L106 | 1-408-775-21 | s INDUCTOR, CHIP 6.8uH |
| L107 | 1-408-775-21 | s INDUCTOR, CHIP 6.8uH |
| L108 | 1-408-780-21 | s INDUCTOR, CHIP 18uH |
| L109 | 1-408-797-11 | s INDUCTOR, CHIP 470uH |
| L111 | 1-408-797-11 | s INDUCTOR, CHIP 470uH |
| L112 | 1-408-797-11 | s INDUCTOR, CHIP 470uH |
| L113 | 1-408-777-00 | s INDUCTOR, CHIP 10uH |
| L114 | 1-408-779-31 | s INDUCTOR, CHIP 15uH |
| L115 | 1-408-780-21 | s INDUCTOR, CHIP 18uH |
| L201 | 1-408-982-11 | s INDUCTOR 100uH |
| L204 | 1-408-782-11 | s INDUCTOR, CHIP 27uH |
| L205 | 1-408-776-00 | s INDUCTOR, CHIP 8.2uH |
| L301 | 1-408-790-00 | s INDUCTOR, CHIP 120uH |
| L302 | 1-408-789-21 | s INDUCTOR, CHIP 100uH |
| L303 | 1-408-777-00 | s INDUCTOR, CHIP 10uH |
| L305 | 1-408-779-31 | s INDUCTOR, CHIP 15uH |
| L306 | 1-408-782-11 | s INDUCTOR, CHIP 27uH |
| L307 | 1-408-779-31 | s INDUCTOR, CHIP 15uH |
| L308 | 1-408-783-00 | s INDUCTOR, CHIP 33uH |
| L309 | 1-408-970-21 | s INDUCTOR 10uH |
| L310 | 1-408-982-11 | s INDUCTOR 100uH |
| L312 | 1-408-982-11 | s INDUCTOR 100uH |
| L401 | 1-408-782-11 | s INDUCTOR, CHIP 27uH |
| L402 | 1-408-970-21 | s INDUCTOR 10uH |
| L501 | 1-408-984-21 | s INDUCTOR 150uH |
| L502 | 1-408-781-00 | s INDUCTOR, CHIP 22uH |
| L503 | 1-408-765-21 | s INDUCTOR, CHIP 1uH |
| L504 | 1-408-765-21 | s INDUCTOR, CHIP 1uH |
| L505 | 1-408-776-00 | s INDUCTOR, CHIP 8.2uH |
| L506 | 1-408-982-11 | s INDUCTOR 100uH |
| L510 | 1-408-777-00 | s INDUCTOR, CHIP 10uH |
| L601 | 1-408-982-11 | s INDUCTOR 100uH |
| L602 | 1-408-792-00 | s INDUCTOR, CHIP 180uH |
| L603 | 1-408-781-00 | s INDUCTOR, CHIP 22uH |
| L604 | 1-408-789-21 | s INDUCTOR, CHIP 100uH |
| L605 | 1-408-790-00 | s INDUCTOR, CHIP 120uH |
| L606 | 1-408-793-21 | s INDUCTOR, CHIP 220uH |
| L701 | 1-408-780-21 | s INDUCTOR, CHIP 18uH |
| L702 | 1-408-795-21 | s INDUCTOR, CHIP 330uH |
| L705 | 1-408-978-21 | s INDUCTOR 47uH |

(HK-5 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|------------------------|
| L710 | 1-410-476-11 | s INDUCTOR 33uH |
| L801 | 1-408-781-00 | s INDUCTOR, CHIP 22uH |
| L802 | 1-408-982-11 | s INDUCTOR 100uH |
| L803 | 1-408-795-21 | s INDUCTOR, CHIP 330uH |
| LV501 | 1-404-594-11 | s COIL, VAR |
| Q101 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q102 | 8-729-901-04 | s TRANSISTOR DTA114EK |
| Q103 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q104 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q105 | 8-729-904-07 | s TRANSISTOR FMG2 |
| Q107 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q110 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q111 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q112 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q113 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q116 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q117 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q118 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q119 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q120 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q121 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q122 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q123 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q124 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q125 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q126 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q127 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q128 | 8-729-202-38 | s TRANSISTOR 2SC3326N |
| Q129 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q130 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q131 | 8-729-216-22 | s TRANSISTOR 2SA1162 |
| Q132 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q181 | 8-729-907-46 | s TRANSISTOR 1M21 |
| Q182 | 8-729-903-10 | s TRANSISTOR FMW1 |
| Q183 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q184 | 8-729-216-22 | s TRANSISTOR 2SA1162 |
| Q209 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q210 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q211 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q212 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q213 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q214 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q215 | 8-729-902-96 | s TRANSISTOR FMS1 |
| Q217 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q218 | 8-729-200-86 | s TRANSISTOR 2SC2714-O |
| Q301 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q302 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q305 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q306 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q307 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q309 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q310 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q311 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q312 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q313 | 8-729-216-22 | s TRANSISTOR 2SA1162 |
| Q314 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q315 | 8-729-201-27 | s TRANSISTOR 2SC2715-Y |
| Q316 | 8-729-901-01 | s TRANSISTOR DTC144EK |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(HK-5 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------------------|----------------------|
| Q317 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q318 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q319 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q320 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q321 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q322 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q323 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q324 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q325 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q326 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q327 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q328 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q330 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q389 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q401 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q402 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q403 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q404 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q405 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q406 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q407 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q408 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q409 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q410 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q411 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q412 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q413 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q414 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q415 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q416 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q417 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q418 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q419 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q420 | 8-729-202-38 s | TRANSISTOR 2SC3326N |
| Q421 | 8-729-202-38 s | TRANSISTOR 2SC3326N |
| Q422 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| 201-27 s | TRANSISTOR 2SC2715-Y | |
| Q424 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q425 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q426 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q427 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q428 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q429 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q430 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q431 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q501 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q502 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q503 | 8-729-901-00 s | TRANSISTOR DTC124EK |
| Q504 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q601 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q603 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q604 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q605 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q606 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q607 | 8-72 | |
| Q608 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q609 | 8-729-901-00 s | TRANSISTOR DTC124EK |
| Q610 | 8-729-904-04 s | TRANSISTOR FMS2 |

(HK-5 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------------|-----------------------------|
| Q611 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q612 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q613 | 8-729-900-89 s | TRANSISTOR DTC144ES |
| Q701 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q702 | 8-729-202-38 s | TRANSISTOR 2SC3326N |
| Q703 | 8-729-202-38 s | TRANSISTOR 2SC3326N |
| Q704 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q706 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q707 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q710 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q711 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q712 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q720 | 8-729-200-86 s | TRANSISTOR 2SC2714-0 |
| Q721 | 8-729-200-86 s | TRANSISTOR 2SC2714-0 |
| Q722 | 8-729-200-86 s | TRANSISTOR 2SC2714-0 |
| Q723 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q724 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q801 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q802 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q803 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q804 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| Q805 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q811 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q901 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q902 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q903 | 8-729-104-25 s | TRANSISTOR 2SB804-AV |
| Q904 | 8-729-201-27 s | TRANSISTOR 2SC2715-Y |
| R115 | 1-216-639-11 s | METAL, CHIP 330 0.5% 1/10W |
| R116 | 1-216-635-11 s | METAL, CHIP 220 0.5% 1/10W |
| R142 | 1-216-748-11 s | METAL, CHIP 39K 1% 1/10W |
| R146 | 1-216-645-11 s | METAL, CHIP 560 0.5% 1/10W |
| R160 | 1-216-643-11 s | METAL, CHIP 470 0.5% 1/10W |
| R171 | 1-216-748-11 s | METAL, CHIP 39K 1% 1/10W |
| R174 | 1-216-748-11 s | METAL, CHIP 39K 1% 1/10W |
| R195 | 1-216-748-11 s | METAL, CHIP 39K 1% 1/10W |
| R201 | 1-216-641-11 s | METAL, CHIP 390 0.5% 1/10W |
| R202 | 1-215-397-00 s | METAL 100 1% 1/6W |
| R233 | 1-216-064-00 s | METAL, CHIP 4.3K 5% 1/10W |
| R243 | 1-216-643-11 s | METAL, CHIP 470 0.5% 1/10W |
| R244 | 1-216-673-11 s | METAL, CHIP 8.2K 0.5% 1/10W |
| R302 | 1-216-651-11 s | METAL, CHIP 1K 0.5% 1/10W |
| R303 | 1-216-659-11 s | METAL, CHIP 2.2K 0.5% 1/10W |
| R304 | 1-216-673-11 s | METAL, CHIP 8.2K 0.5% 1/10W |
| R305 | 1-216-677-11 s | METAL, CHIP 12K 0.5% 1/10W |
| R313 | 1-216-633-11 s | METAL, CHIP 180 0.5% 1/10W |
| R316 | 1-216-673-11 s | METAL, CHIP 8.2K 0.5% 1/10W |
| R317 | 1-216-670-11 s | METAL, CHIP 6.2K 0.5% 1/10W |
| R321 | 1-216-032-00 s | METAL, CHIP 200 5% 1/10W |
| R323 | 1-216-643-11 s | METAL, CHIP 470 0.5% 1/10W |
| R329 | 1-216-653-11 s | METAL, CHIP 1.2K 0.5% 1/10W |
| R332 | 1-216-645-11 s | METAL, CHIP 560 0.5% 1/10W |
| R333 | 1-216-623-11 s | METAL, CHIP 68 0.5% 1/10W |
| R340 | 1-216-653-11 s | METAL, CHIP 1.2K 0.5% 1/10W |
| R341 | 1-216-641-11 s | METAL, CHIP 390 0.5% 1/10W |
| R365 | 1-216-667-11 s | METAL, CHIP 4.7K 0.5% 1/10W |
| R403 | 1-216-667-11 s | METAL, CHIP 4.7K 0.5% 1/10W |
| R404 | 1-216-654-11 s | METAL, CHIP 1.3K 0.5% 1/10W |
| R409 | 1-216-653-11 s | METAL, CHIP 1.2K 0.5% 1/10W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(HK-5 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-------------------------------|
| R428 | 1-216-748-11 | s METAL, CHIP 39K 1% 1/10W |
| R435 | 1-216-693-11 | s METAL, CHIP 56K 0.5% 1/10W |
| R436 | 1-216-663-11 | s METAL, CHIP 3.3K 0.5% 1/10W |
| R437 | 1-216-667-11 | s METAL, CHIP 4.7K 0.5% 1/10W |
| R438 | 1-216-651-11 | s METAL, CHIP 1K 0.5% 1/10W |
| R439 | 1-216-666-11 | s METAL, CHIP 4.3K 0.5% 1/10W |
| R441 | 1-216-666-11 | s METAL, CHIP 4.3K 0.5% 1/10W |
| R446 | 1-216-665-11 | s METAL, CHIP 3.9K 0.5% 1/10W |
| R447 | 1-216-679-11 | s METAL, CHIP 15K 0.5% 1/10W |
| R451 | 1-216-643-11 | s METAL, CHIP 470 0.5% 1/10W |
| R452 | 1-216-643-11 | s METAL, CHIP 470 0.5% 1/10W |
| R453 | 1-216-659-11 | s METAL, CHIP 2.2K 0.5% 1/10W |
| R454 | 1-216-663-11 | s METAL, CHIP 3.3K 0.5% 1/10W |
| R455 | 1-216-653-11 | s METAL, CHIP 1.2K 0.5% 1/10W |
| R466 | 1-216-643-11 | s METAL, CHIP 470 0.5% 1/10W |
| R467 | 1-216-641-11 | s METAL, CHIP 390 0.5% 1/10W |
| R475 | 1-216-058-00 | s METAL, CHIP 2.4K 5% 1/10W |
| R483 | 1-216-082-00 | s METAL, CHIP 24K 5% 1/10W |
| R501 | 1-216-643-11 | s METAL, CHIP 470 0.5% 1/10W |
| R502 | 1-216-665-11 | s METAL, CHIP 3.9K 0.5% 1/10W |
| R503 | 1-216-643-11 | s METAL, CHIP 470 0.5% 1/10W |
| R504 | 1-216-661-11 | s METAL, CHIP 2.7K 0.5% 1/10W |
| R505 | 1-216-653-11 | s METAL, CHIP 1.2K 0.5% 1/10W |
| R510 | 1-216-667-11 | s METAL, CHIP 4.7K 0.5% 1/10W |
| R511 | 1-216-647-11 | s METAL, CHIP 680 0.5% 1/10W |
| R512 | 1-216-667-11 | s METAL, CHIP 4.7K 0.5% 1/10W |
| R513 | 1-216-645-11 | s METAL, CHIP 560 0.5% 1/10W |
| R514 | 1-216-679-11 | s METAL, CHIP 15K 0.5% 1/10W |
| R515 | 1-216-699-11 | s METAL, CHIP 100K 0.5% 1/10W |
| R516 | 1-216-659-11 | s METAL, CHIP 2.2K 0.5% 1/10W |
| R517 | 1-216-641-11 | s METAL, CHIP 390 0.5% 1/10W |
| R522 | 1-216-748-11 | s METAL, CHIP 39K 1% 1/10W |
| R530 | 1-216-629-11 | s METAL, CHIP 120 0.5% 1/10W |
| R531 | 1-216-627-11 | s METAL, CHIP 100 0.5% 1/10W |
| R532 | 1-216-611-11 | s METAL, CHIP 22 0.5% 1/10W |
| R537 | 1-216-641-11 | s METAL, CHIP 390 0.5% 1/10W |
| R541 | 1-216-629-11 | s METAL, CHIP 120 0.5% 1/10W |
| R542 | 1-216-637-11 | s METAL, CHIP 270 0.5% 1/10W |
| R543 | 1-216-748-11 | s METAL, CHIP 39K 1% 1/10W |
| R544 | 1-216-748-11 | s METAL, CHIP 39K 1% 1/10W |
| R603 | 1-216-639-11 | s METAL, CHIP 330 0.5% 1/10W |
| R605 | 1-216-669-11 | s METAL, CHIP 5.6K 0.5% 1/10W |
| R606 | 1-216-683-11 | s METAL, CHIP 22K 0.5% 1/10W |
| R607 | 1-216-667-11 | s METAL, CHIP 4.7K 0.5% 1/10W |
| R613 | 1-216-655-11 | s METAL, CHIP 1.5K 0.5% 1/10W |
| R614 | 1-216-667-11 | s METAL, CHIP 4.7K 0.5% 1/10W |
| R618 | 1-216-651-11 | s METAL, CHIP 1K 0.5% 1/10W |
| R629 | 1-216-667-11 | s METAL, CHIP 4.7K 0.5% 1/10W |
| R632 | 1-216-645-11 | s METAL, CHIP 560 0.5% 1/10W |
| R633 | 1-216-659-11 | s METAL, CHIP 2.2K 0.5% 1/10W |
| R640 | 1-216-651-11 | s METAL, CHIP 1K 0.5% 1/10W |
| R641 | 1-216-651-11 | s METAL, CHIP 1K 0.5% 1/10W |
| R663 | 1-216-667-11 | s METAL, CHIP 4.7K 0.5% 1/10W |
| R664 | 1-216-655-11 | s METAL, CHIP 1.5K 0.5% 1/10W |
| R675 | 1-216-106-00 | s METAL, CHIP 240K 5% 1/10W |
| R676 | 1-216-106-00 | s METAL, CHIP 240K 5% 1/10W |
| R678 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R704 | 1-216-645-11 | s METAL, CHIP 560 0.5% 1/10W |
| R705 | 1-216-635-11 | s METAL, CHIP 220 0.5% 1/10W |

(HK-5 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--------------------------------|
| R707 | 1-216-651-11 | s METAL, CHIP 1K 0.5% 1/10W |
| R709 | 1-216-673-11 | s METAL, CHIP 8.2K 0.5% 1/10W |
| R710 | 1-216-643-11 | s METAL, CHIP 470 0.5% 1/10W |
| R711 | 1-216-645-11 | s METAL, CHIP 560 0.5% 1/10W |
| R748 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R761 | 1-216-034-00 | s METAL, CHIP 240 5% 1/10W |
| R774 | 1-216-660-11 | s METAL, CHIP 2.4K 0.5% 1/10W |
| RV101 | 1-230-869-11 | s RES, ADJ, METAL 4.7K |
| RV201 | 1-230-867-11 | s RES, ADJ, METAL 1K |
| RV202 | 1-230-868-11 | s RES, ADJ, METAL 2.2K |
| RV301 | 1-230-869-11 | s RES, ADJ, METAL 4.7K |
| RV302 | 1-230-870-11 | s RES, ADJ, METAL 10K |
| RV303 | 1-230-870-11 | s RES, ADJ, METAL 10K |
| RV304 | 1-230-870-11 | s RES, ADJ, METAL 10K |
| RV305 | 1-230-875-21 | s RES, ADJ, METAL 220K |
| RV401 | 1-230-873-11 | s RES, ADJ, METAL 47K |
| RV402 | 1-230-869-11 | s RES, ADJ, METAL 4.7K |
| RV403 | 1-230-868-11 | s RES, ADJ, METAL 2.2K |
| RV404 | 1-230-868-11 | s RES, ADJ, METAL 2.2K |
| RV405 | 1-230-866-11 | s RES, ADJ, METAL 470 |
| RV501 | 1-230-870-11 | s RES, ADJ, METAL 10K |
| RV502 | 1-230-870-11 | s RES, ADJ, METAL 10K |
| RV601 | 1-230-871-11 | s RES, ADJ, METAL 22K |
| RV602 | 1-230-870-11 | s RES, ADJ, METAL 10K |
| RV700 | 1-230-868-11 | s RES, ADJ, METAL 2.2K |
| RV801 | 1-230-873-11 | s RES, ADJ, METAL 47K |
| RV802 | 1-230-875-21 | s RES, ADJ, METAL 220K |
| T101 | 1-409-466-21 | s TRAP 1.5/1.7MHz |
| T501 | 1-235-437-11 | s FILTER, BANDPASS 4.43MHz |
| T601 | 1-409-396-11 | s TRAP, CHROMA |
| T602 | 1-409-394-11 | s TRAP, CHROMA 4.43MHz |
| X501 | 1-567-347-11 | s RESONATOR, CERAMIC 13.301MHz |
| X601 | 1-567-504-11 | s CRYSTAL 4.433619MHz |
| X602 | 1-567-827-11 | s CRYSTAL 5.85938MHz |

HP-42 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--------------------------------|
| 1pc | 1-629-477-11 | o PRINTED CIRCUIT BOARD, HP-42 |
| C1 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| CN1011 | 1-507-854-00 | s JACK, PHONE |
| R1 | 1-249-406-11 | s CARBON 120 5% 1/4W |
| R2 | 1-249-406-11 | s CARBON 120 5% 1/4W |
| RV1 | 1-237-703-11 | s RES, VAR CARBON 2K/2K |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

IG-4 BOARD

Ref. No.
or Q'ty Part No. SP Description

1pc A-7070-955-A o MOUNTED CIRCUIT BOARD, IG-4
All of the component parts on the IG-4 Board are
supplied together with when you order SE-10(P) Board.

| | |
|-------|--|
| C024 | 1-164-232-11 s CERAMIC 0.01uF 10% 100V |
| C025 | 1-164-232-11 s CERAMIC 0.01uF 10% 100V |
| C026 | 1-164-232-11 s CERAMIC 0.01uF 10% 100V |
| C027 | 1-164-232-11 s CERAMIC 0.01uF 10% 100V |
| CN004 | 1-566-945-11 s CONNECTOR, BOARD TO BOARD 18P |
| CN005 | 1-566-946-11 s CONNECTOR, BOARD TO BOARD 22P |
| CN006 | 1-566-945-11 s CONNECTOR, BOARD TO BOARD 18P |
| CN007 | 1-566-945-11 s CONNECTOR, BOARD TO BOARD 18P |

KY-162 BOARD

Ref. No.
or Q'ty Part No. SP Description

| | |
|------|---|
| 1pc | A-7061-779-A o MOUNTED CIRCUIT BOARD, KY-162 |
| 1pc | 3-718-657-01 o HOLDER, LED |
| BT1 | △1-528-229-11 o BATTERY, LITHIUM CR-2450 |
| C2 | 1-162-210-31 s CERAMIC 30PF 5% 50V |
| C3 | 1-162-210-31 s CERAMIC 30PF 5% 50V |
| C4 | 1-130-491-00 s MYLAR 0.047uF 5% 50V |
| C6 | 1-126-176-11 s ELECT 220uF 20% 10V |
| C7 | 1-130-491-00 s MYLAR 0.047uF 5% 50V |
| C8 | 1-125-513-11 s DOUBLE LAYERS 0.047 FARAD 5.5V |
| C9 | 1-126-094-11 s ELECT 4.7uF 20% 35V |
| C10 | 1-161-379-00 s CERAMIC 0.01uF 20% 25V |
| C11 | 1-130-491-00 s MYLAR 0.047uF 5% 50V |
| C12 | 1-162-210-31 s CERAMIC 30PF 5% 50V |
| C13 | 1-162-210-31 s CERAMIC 30PF 5% 50V |
| C14 | 1-130-491-00 s MYLAR 0.047uF 5% 50V |
| C16 | 1-130-491-00 s MYLAR 0.047uF 5% 50V |
| C17 | 1-126-094-11 s ELECT 4.7uF 20% 35V |
| C18 | 1-102-106-00 s CERAMIC 100PF 10% 50V |
| D1 | 8-719-911-19 s DIODE 1SS119 |
| D10 | 8-719-911-19 s DIODE 1SS119 |
| D12 | 8-719-911-19 s DIODE 1SS119 |
| D14 | 8-719-911-19 s DIODE 1SS119 |
| D15 | 8-719-911-19 s DIODE 1SS119 |
| D16 | 8-719-911-19 s DIODE 1SS119 |
| D17 | 8-719-911-19 s DIODE 1SS119 |
| D18 | 8-719-911-19 s DIODE 1SS119 |
| D19 | 8-719-911-19 s DIODE 1SS119 |
| D23 | 8-719-911-19 s DIODE 1SS119 |
| D24 | 8-719-911-19 s DIODE 1SS119 |
| D29 | △8-719-104-10 s DIODE 1SS99 |
| D45 | 8-719-911-19 s DIODE 1SS119 |
| D46 | 8-719-911-19 s DIODE 1SS119 |
| D48 | 8-719-200-02 s DIODE 10E2 |
| D49 | 8-719-911-19 s DIODE 1SS119 |
| D51 | △8-719-104-10 s DIODE 1SS99 |
| D52 | 8-719-911-19 s DIODE 1SS119 |
| D54 | 8-719-911-19 s DIODE 1SS119 |
| D55 | 8-719-911-19 s DIODE 1SS119 |
| D102 | 8-719-802-11 s LED TLUG154, GRN |
| D104 | 8-719-939-39 s LED GL5HD8, RED |
| D108 | 8-719-939-39 s LED GL5HD8, RED |
| D109 | 8-719-939-39 s LED GL5HD8, RED |
| D110 | 8-719-939-39 s LED GL5HD8, RED |
| D111 | 8-719-939-39 s LED GL5HD8, RED |
| D112 | 8-719-939-39 s LED GL5HD8, RED |
| D113 | 8-719-939-39 s LED GL5HD8, RED |
| D114 | 8-719-820-28 s LED TLG-256, GRN |
| D115 | 8-719-820-28 s LED TLG-256, GRN |
| D116 | 8-719-939-39 s LED GL5HD8, RED |
| D117 | 8-719-802-11 s LED TLUG154, GRN |
| IC1 | 8-759-605-23 s IC M50747H-601SP |
| IC4 | 8-759-645-16 s IC M54516P |
| IC5 | 8-759-600-68 s IC M54562P |
| IC6 | 8-759-982-21 s IC RC78L05A |
| IC7 | 8-759-937-29 s IC MB88201H-539N |
| Q2 | 8-729-900-67 s TRANSISTOR DTA124XS |
| Q3 | 8-729-900-67 s TRANSISTOR DTA124XS |

Note: Please see pages 14-15 thru 14-18 for the parts that
are not listed in the parts list.

(KY-162 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|------------------------|
| Q4 | 8-729-900-67 | s TRANSISTOR DTA124XS |
| Q5 | 8-729-281-52 | s TRANSISTOR 2SC1815-Y |
| Q6 | 8-729-281-52 | s TRANSISTOR 2SC1815-Y |
| Q15 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| R8 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R9 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R10 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R11 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R12 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R13 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R14 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R15 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R16 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R17 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R18 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R19 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R20 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R21 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R22 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R23 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R25 | 1-249-404-00 | s CARBON 82 5% 1/4W |
| R26 | 1-249-404-00 | s CARBON 82 5% 1/4W |
| R27 | 1-249-404-00 | s CARBON 82 5% 1/4W |
| R29 | 1-249-404-00 | s CARBON 82 5% 1/4W |
| R30 | 1-249-404-00 | s CARBON 82 5% 1/4W |
| R31 | 1-249-404-00 | s CARBON 82 5% 1/4W |
| R32 | 1-247-903-00 | s CARBON 1M 5% 1/4W |
| R33 | 1-249-422-11 | s CARBON 2.7K 5% 1/4W |
| R34 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R35 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R36 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R37 | 1-249-422-11 | s CARBON 2.7K 5% 1/4W |
| R38 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R39 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R40 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R41 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R44 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R45 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R48 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R49 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R50 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R51 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R52 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R53 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R54 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R55 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R56 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R57 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R58 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R59 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R73 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R75 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R84 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R85 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R86 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R87 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R88 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R89 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R96 | 1-249-429-11 | s CARBON 10K 5% 1/4W |

(KY-162 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|------------------------------|
| R97 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R98 | 1-249-401-11 | s CARBON 47 5% 1/4W |
| R99 | 1-249-401-11 | s CARBON 47 5% 1/4W |
| R101 | 1-249-403-11 | s CARBON 68 5% 1/4W |
| RB1 | 1-231-410-00 | s RESISTOR BLOCK 10Kx8 |
| RB2 | 1-231-410-00 | s RESISTOR BLOCK 10Kx8 |
| S1 | 1-552-539-00 | s SWITCH, TACTILE |
| S10 | 1-552-539-00 | s SWITCH, TACTILE |
| S12 | 1-552-539-00 | s SWITCH, TACTILE |
| S14 | 1-552-539-00 | s SWITCH, TACTILE |
| S15 | 1-552-539-00 | s SWITCH, TACTILE |
| S16 | 1-552-539-00 | s SWITCH, TACTILE |
| S17 | 1-552-539-00 | s SWITCH, TACTILE |
| S18 | 1-552-539-00 | s SWITCH, TACTILE |
| S19 | 1-552-539-00 | s SWITCH, TACTILE |
| S23 | 1-552-539-00 | s SWITCH, TACTILE |
| S24 | 1-552-539-00 | s SWITCH, TACTILE |
| S29 | 1-552-539-00 | s SWITCH, TACTILE |
| X1 | 1-567-869-11 | s RESONATOR, CERAMIC 9.83MHZ |
| X2 | 1-567-192-11 | s RESONATOR, CERAMIC 4.00MHZ |

LD-1 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-------------------------------|
| 1pc | A-7070-024-A | o MOUNTED CIRCUIT BOARD, LD-1 |
| 1pc | 1-613-367-11 | o PRINTED CIRCUIT BOARD, LD-1 |
| D901 | 8-719-928-54 | s DIODE GL-450S |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

LP-52 BOARD

Ref. No.

or Q'ty Part No. SP Description

1pc A-7061-770-A o MOUNTED CIRCUIT BOARD, LP-52

D1 8-719-901-65 s DIODE LT-9200H
D2 8-719-820-72 s DIODE TLUY144
D3 8-719-901-65 s DIODE LT-9200H
D4 8-719-820-73 s DIODE TLUG144
D5 8-719-901-66 s DIODE LT-9200N

D6 8-719-820-72 s DIODE TLUY144
D7 8-719-901-66 s DIODE LT-9200N

R1 1-249-404-00 s CARBON 82 5% 1/4W
R2 1-249-404-00 s CARBON 82 5% 1/4W
R3 1-249-403-11 s CARBON 68 5% 1/4W
R4 1-249-404-00 s CARBON 82 5% 1/4W
R5 1-249-404-00 s CARBON 82 5% 1/4W

R6 1-249-403-11 s CARBON 68 5% 1/4W
R7 1-249-404-00 s CARBON 82 5% 1/4W
R8 1-249-404-00 s CARBON 82 5% 1/4W
R9 1-249-404-00 s CARBON 82 5% 1/4W
R10 1-249-404-00 s CARBON 82 5% 1/4W

MB-19 BOARD

Ref. No.

or Q'ty Part No. SP Description

1pc A-7061-824-A o MOUNTED CIRCUIT BOARD, MB-19
This board includes PA-27 and PD-19 Boards.

1pc 4-911-047-01 o VIBRATION CONTROL (D)

C609 1-124-234-00 s ELECT 22uF 20% 16V
C652 1-124-234-00 s ELECT 22uF 20% 16V
C662 1-124-234-00 s ELECT 22uF 20% 16V
C671 1-124-225-00 s ELECT 100uF 20% 6.3V
C672 1-135-091-00 s TANTALUM, CHIP 1uF 10% 16V

C673 1-124-225-00 s ELECT 100uF 20% 6.3V
C674 1-164-232-11 s CERAMIC 0.01uF 10% 100V
C676 1-124-225-00 s ELECT 100uF 20% 6.3V
C678 1-124-225-00 s ELECT 100uF 20% 6.3V
C679 1-164-232-11 s CERAMIC 0.01uF 10% 100V

C680 1-135-155-21 s TANTAL CHIP 4.7uF 10% 16V
C681 1-124-225-00 s ELECT 100uF 20% 6.3V
C682 1-135-157-21 s TANTALUM, CHIP 10uF 20% 6.3V
C683 1-164-232-11 s CERAMIC 0.01uF 10% 100V

CN601 1-566-943-11 s CONNECTOR, BOARD TO BOARD 18P
CN602 1-566-944-11 s CONNECTOR, BOARD TO BOARD 22P

D601 8-719-104-34 s DIODE 1S2835
D602 8-719-104-34 s DIODE 1S2835
D603 8-719-104-34 s DIODE 1S2835
D604 8-719-400-18 s DIODE 1S2837-T1
D641 8-719-800-76 s DIODE 1SS226

D642 8-719-800-76 s DIODE 1SS226

IC601 8-759-149-34 s IC UPD75106G-591-1B
IC603 8-759-208-11 s IC TC4053BFHB
IC651 8-759-603-27 s IC M5201FP
IC661 8-759-603-27 s IC M5201FP
IC671 8-741-150-50 s IC SBX1505-01

L601 1-408-970-21 s INDUCTOR 10uH
L602 1-408-970-21 s INDUCTOR 10uH
L603 1-408-970-21 s INDUCTOR 10uH
L604 1-408-948-00 s INDUCTOR 220uH
L605 1-408-948-00 s INDUCTOR 220uH

L641 1-410-393-11 s INDUCTOR, CHIP 100uH
L671 1-408-948-00 s INDUCTOR 220uH

Q601 8-729-901-06 s TRANSISTOR DTA144EK
Q602 8-729-901-01 s TRANSISTOR DTC144EK
Q603 8-729-901-01 s TRANSISTOR DTC144EK
Q604 8-729-901-01 s TRANSISTOR DTC144EK
Q605 8-729-901-06 s TRANSISTOR DTA144EK

Q606 8-729-901-06 s TRANSISTOR DTA144EK
Q607 8-729-901-01 s TRANSISTOR DTC144EK
Q608 8-729-901-01 s TRANSISTOR DTC144EK
Q609 8-729-901-06 s TRANSISTOR DTA144EK
Q671 8-729-100-66 s TRANSISTOR 2SC1623

R641 1-216-072-00 s METAL, CHIP 9.1K 5% 1/10W
R645 1-216-072-00 s METAL, CHIP 9.1K 5% 1/10W
R673 1-216-052-00 s METAL, CHIP 1.3K 5% 1/10W

S641 1-554-371-51 s SWITCH, TACTILE
S642 1-554-371-51 s SWITCH, TACTILE
S643 1-554-371-51 s SWITCH, TACTILE
S644 1-554-371-51 s SWITCH, TACTILE
S645 1-554-371-51 s SWITCH, TACTILE

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(MB-19 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|------------------------|
| S646 | 1-554-371-51 | s SWITCH, TACTILE |
| S647 | 1-554-371-51 | s SWITCH, TACTILE |
| S648 | 1-570-909-21 | s SWITCH, PUSH |
| S649 | 1-554-371-51 | s SWITCH, TACTILE |
| T603 | 1-235-398-11 | s FILTER, BANDPASS |
| T651 | 1-235-900-11 | s FILTER, LOW-PASS |
| T661 | 1-235-900-11 | s FILTER, LOW-PASS |
| X601 | 1-567-121-00 | s CRYSTAL, 4.194304MHz |

MC-28 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--------------------------------|
| 1pc | 1-622-222-11 | o PRINTED CIRCUIT BOARD, MC-28 |
| C1 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C2 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| CN1009 | 1-507-797-21 | s JACK, PIN 2P, FEMALE |

MD-23(P) BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--|
| 1pc | A-7062-168-A | o MOUNTED CIRCUIT BOARD, MD-23 (P) This board includes FP-122 and FP-84 Boards. |
| C801 | 1-124-465-00 | s ELECT 0.47uF 20% 50V |
| C802 | 1-124-464-11 | s ELECT 0.22MF 20% 50V |
| C804 | 1-126-160-11 | s ELECT 1uF 20% 50V |
| C806 | 1-126-151-11 | s ELECT, NONPOLAR 4.7uF 20% 16V |
| C808 | 1-126-162-11 | s ELECT 3.3uF 20% 50V |
| C809 | 1-124-584-00 | s ELECT 100uF 20% 10V |
| C810 | 1-126-096-11 | s ELECT 10uF 20% 35V |
| C811 | 1-126-096-11 | s ELECT 10uF 20% 35V |
| C812 | 1-126-096-11 | s ELECT 10uF 20% 35V |
| C813 | 1-126-160-11 | s ELECT 1uF 20% 50V |
| C814 | 1-126-160-11 | s ELECT 1uF 20% 50V |
| C815 | 1-126-160-11 | s ELECT 1uF 20% 50V |
| C816 | 1-124-229-00 | s ELECT 33uF 20% 10V |
| C817 | 1-124-229-00 | s ELECT 33uF 20% 10V |
| C818 | 1-124-229-00 | s ELECT 33uF 20% 10V |
| C821 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C822 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C825 | 1-126-162-11 | s ELECT 3.3uF 20% 50V |
| C835 | 1-126-501-11 | s ELECT, NONPOLAR 0.15uF 20% 50V |
| C836 | 1-164-157-11 | s CERAMIC, CHIP 0.068uF 10% 25V |
| C837 | 1-124-464-11 | s ELECT 0.22MF 20% 50V |
| C838 | 1-124-589-11 | s ELECT 47uF 20% 16V |
| C839 | 1-126-529-11 | s ELECT, NONPOLAR 0.47uF 20% 50V |
| C840 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C841 | 1-124-589-11 | s ELECT 47uF 20% 16V |
| C901 | 1-124-234-00 | s ELECT 22uF 20% 16V |
| C902 | 1-124-234-00 | s ELECT 22uF 20% 16V |
| C903 | 1-124-234-00 | s ELECT 22uF 20% 16V |
| C904 | 1-124-234-00 | s ELECT 22uF 20% 16V |
| C905 | 1-124-257-00 | s ELECT 2.2uF 20% 50V |
| C906 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C908 | 1-126-096-11 | s ELECT 10uF 20% 35V |
| C909 | 1-163-077-00 | s CERAMIC, CHIP 0.1uF 25V |
| C910 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| C911 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| C912 | 1-130-483-00 | s MYLAR 0.01uF 5% 50V |
| C913 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C914 | 1-124-589-11 | s ELECT 47uF 20% 16V |
| C915 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C916 | 1-126-530-11 | s ELECT, NONPOLAR 22uF 20% 10V |
| C917 | 1-126-530-11 | s ELECT, NONPOLAR 22uF 20% 10V |
| C918 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C919 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C950 | 1-164-157-11 | s CERAMIC, CHIP 0.068uF 10% 25V |
| CN807 | 1-566-527-11 | s CONNECTOR, FPC 11P |
| CN808 | 1-566-531-11 | s CONNECTOR, FPC 15P |
| CN809 | 1-566-945-11 | s CONNECTOR, BOARD TO BOARD 18P |
| CN810 | 1-566-946-11 | s CONNECTOR, BOARD TO BOARD 22P |
| CN811 | 1-566-367-11 | o CONNECTOR, EL-BOW 18P, FEMALE |
| CN812 | 1-566-942-11 | s CONNECTOR, EL-BOW, 30P, FEMALE |
| CN814 | 1-566-367-11 | o CONNECTOR, EL-BOW 18P, FEMALE |
| D803 | 8-719-200-27 | s DIODE E10DS2 |
| D810 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D811 | 8-719-200-27 | s DIODE E10DS2 |
| D901 | 8-719-400-18 | s DIODE 1S2837-T1 |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(MD-23(P) BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-------------------|
| D902 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D903 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D904 | 8-719-800-76 | s DIODE 1SS226 |
| D905 | 8-719-400-18 | s DIODE 1S2837-T1 |

| | | |
|-------|--------------|---------------|
| IC801 | 8-752-037-08 | s IC CXA1109M |
| IC802 | 8-759-802-79 | s IC LB1616M |
| IC804 | 8-759-981-82 | s IC RC3414M |
| IC805 | 8-759-100-93 | s IC UPC393G2 |
| IC806 | 8-759-207-00 | s IC TA7733F |

| | | |
|-------|--------------|---------------|
| IC807 | 8-759-107-68 | s IC CX20115A |
| IC808 | 8-759-700-62 | s IC NJM4562D |
| IC809 | 8-759-100-94 | s IC UPC358G2 |
| IC901 | 8-759-207-50 | s IC TA7745F |
| IC902 | 8-759-100-95 | s IC UPC324G2 |

| | | |
|-------|--------------|-----------------|
| IC903 | 8-759-925-66 | s IC BA6303F |
| IC904 | 8-759-208-15 | s IC TC4066BFHB |

PS801 A1-532-685-00 s LINK, IC 0.8A

| | | |
|------|--------------|--------------------------|
| Q806 | 8-729-111-14 | s TRANSISTOR 2SA1385-Z-L |
| Q807 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q809 | 8-729-143-91 | s TRANSISTOR 2SC3518-ZL |
| Q810 | 8-729-805-25 | s TRANSISTOR 2SB1121-S |
| Q811 | 8-729-805-25 | s TRANSISTOR 2SB1121-S |

| | | |
|------|--------------|--------------------------|
| Q812 | 8-729-111-14 | s TRANSISTOR 2SA1385-Z-L |
| Q813 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q820 | 8-729-143-91 | s TRANSISTOR 2SC3518-ZL |
| Q821 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q880 | 8-729-100-66 | s TRANSISTOR 2SC1623 |

| | | |
|------|--------------|-------------------------|
| Q901 | 8-729-920-82 | s TRANSISTOR 2SB1188-QR |
| Q902 | 8-729-920-82 | s TRANSISTOR 2SB1188-QR |
| Q903 | 8-729-920-82 | s TRANSISTOR 2SB1188-QR |
| Q904 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q905 | 8-729-901-06 | s TRANSISTOR DTA144EK |

| | | |
|------|--------------|-----------------------|
| Q906 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q907 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q908 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q909 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q950 | 8-729-903-97 | s TRANSISTOR FMS1FE |

| | | |
|------|--------------|------------------------------|
| R832 | 1-216-304-11 | s METAL, CHIP 3.3 5% 1/10W |
| R833 | 1-216-304-11 | s METAL, CHIP 3.3 5% 1/10W |
| R834 | 1-216-304-11 | s METAL, CHIP 3.3 5% 1/10W |
| R890 | 1-216-681-11 | s METAL, CHIP 18K 0.5% 1/10W |
| R891 | 1-216-681-11 | s METAL, CHIP 18K 0.5% 1/10W |

| | | |
|------|--------------|-----------------------------|
| R923 | 1-216-748-11 | s METAL, CHIP 39K 1% 1/10W |
| R927 | 1-216-110-00 | s METAL, CHIP 360K 5% 1/10W |
| R953 | 1-214-972-00 | s METAL 0.22 1% 1/4W |

| | | |
|-------|--------------|------------------------|
| RV801 | 1-230-520-11 | s RES, ADJ, METAL 1K |
| RV802 | 1-230-523-11 | s RES, ADJ, METAL 10K |
| RV803 | 1-230-527-11 | s RES, ADJ, METAL 100K |
| RV901 | 1-230-529-11 | s RES, ADJ, METAL 470K |

THP801 1-202-854-00 s THERMISTOR, POSITIVE

MS-4 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-------------------------------|
| 1pc | A-7090-029-A | s MOUNTED CIRCUIT BOARD, MS-4 |

MT-57 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--------------------------------|
| 1pc | A-7061-773-A | o MOUNTED CIRCUIT BOARD, MT-57 |
| 2pcs | 1-520-506-11 | s METER, AUDIO LEVEL |
| 2pcs | 3-738-923-01 | o HOLDER, LED |

| | | |
|----|--------------|--------------------|
| D1 | 8-719-820-27 | s LED TLY-256, YEL |
| D2 | 8-719-820-27 | s LED TLY-256, YEL |
| D3 | 8-719-820-27 | s LED TLY-256, YEL |
| D4 | 8-719-820-27 | s LED TLY-256, YEL |

| | | |
|----|--------------|----------------------|
| R1 | 1-249-411-11 | s CARBON 330 5% 1/4W |
| R2 | 1-249-411-11 | s CARBON 330 5% 1/4W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

PA-27 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|--|--------------|---------------------------------|
| 1pc | A-7061-826-A | o MOUNTED CIRCUIT BOARD, PA-27 |
| All of the component parts on the PA-27 Board are supplied together with when you order MB-19 Board. | | |
| C001 | 1-163-012-00 | s CERAMIC CHIP 1800PF 10% 50V |
| C002 | 1-124-225-00 | s ELECT 100uF 20% 6.3V |
| C003 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C004 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C005 | 1-130-490-11 | s MYLAR 0.039uF 5% 50V |
| C007 | 1-130-479-00 | s MYLAR 0.0047uF 5% 50V |
| C008 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C010 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C011 | 1-130-469-00 | s FILM 680PF 5% 50V |
| C012 | 1-130-482-00 | s MYLAR 0.0082uF 5% 50V |
| C013 | 1-135-149-21 | s TANTALUM, CHIP 2.2uF 10% 10V |
| C014 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C015 | 1-135-072-21 | s TANTALUM, CHIP 0.22uF 10% 35V |
| C016 | 1-126-153-11 | s ELECT 22uF 20% 6.3V |
| C018 | 1-126-153-11 | s ELECT 22uF 20% 6.3V |
| C019 | 1-126-153-11 | s ELECT 22uF 20% 6.3V |
| C031 | 1-124-225-00 | s ELECT 100uF 20% 6.3V |
| C032 | 1-124-225-00 | s ELECT 100uF 20% 6.3V |
| C034 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C035 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C037 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C038 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C039 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C040 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C041 | 1-109-814-11 | s MICRA, CHIP 220PF 5% 100V |
| C042 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C043 | 1-126-153-11 | s ELECT 22uF 20% 6.3V |
| C044 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C051 | 1-163-012-00 | s CERAMIC CHIP 1800PF 10% 50V |
| C052 | 1-124-225-00 | s ELECT 100uF 20% 6.3V |
| C053 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C054 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C055 | 1-130-490-11 | s MYLAR 0.039uF 5% 50V |
| C057 | 1-130-479-00 | s MYLAR 0.0047uF 5% 50V |
| C058 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C060 | 1-126-154-11 | s ELECT 47uF 20% 6.3V |
| C061 | 1-130-469-00 | s FILM 680PF 5% 50V |
| C062 | 1-130-482-00 | s MYLAR 0.0082uF 5% 50V |
| C063 | 1-135-149-21 | s TANTALUM, CHIP 2.2uF 10% 10V |
| C064 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C065 | 1-135-072-21 | s TANTALUM, CHIP 0.22uF 10% 35V |
| C066 | 1-126-153-11 | s ELECT 22uF 20% 6.3V |
| C068 | 1-126-153-11 | s ELECT 22uF 20% 6.3V |
| C069 | 1-126-153-11 | s ELECT 22uF 20% 6.3V |
| CN001 | 1-563-314-11 | s CONNECTOR, BOARD TO BOARD 20P |
| D031 | 8-719-104-34 | s DIODE 1S2835 |
| D032 | 8-719-104-34 | s DIODE 1S2835 |
| D033 | 8-719-104-34 | s DIODE 1S2835 |
| IC001 | 8-752-009-90 | s IC CX20099 |
| IC002 | 8-759-981-92 | s IC RC4558M |
| IC003 | 8-759-981-92 | s IC RC4558M |
| IC004 | 8-752-322-57 | s IC CXD1077M |
| IC004 | 8-752-322-57 | s IC CXD1077M |

(PA-27 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-------------------------------|
| IC005 | 8-759-908-15 | s IC TL431CLP |
| L001 | 1-408-793-21 | s INDUCTOR, CHIP 220uH |
| Q001 | 8-729-202-38 | s TRANSISTOR 2SC3326N |
| Q002 | 8-729-202-38 | s TRANSISTOR 2SC3326N |
| Q031 | 8-729-207-70 | s TRANSISTOR RN2404 |
| Q031 | 8-729-805-69 | s TRANSISTOR 2SA1341 |
| Q031 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q032 | 8-729-207-70 | s TRANSISTOR RN2404 |
| Q032 | 8-729-805-69 | s TRANSISTOR 2SA1341 |
| Q032 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q033 | 8-729-207-70 | s TRANSISTOR RN2404 |
| Q033 | 8-729-805-69 | s TRANSISTOR 2SA1341 |
| Q033 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q034 | 8-729-216-22 | s TRANSISTOR 2SA1162 |
| Q035 | 8-729-216-22 | s TRANSISTOR 2SA1162 |
| Q051 | 8-729-202-38 | s TRANSISTOR 2SC3326N |
| Q052 | 8-729-202-38 | s TRANSISTOR 2SC3326N |
| R002 | 1-216-078-00 | s METAL, CHIP 16K 5% 1/10W |
| R003 | 1-216-072-00 | s METAL, CHIP 9.1K 5% 1/10W |
| R012 | 1-216-677-11 | s METAL, CHIP 12K 0.5% 1/10W |
| R016 | 1-216-060-00 | s METAL, CHIP 3K 5% 1/10W |
| R017 | 1-216-058-00 | s METAL, CHIP 2.4K 5% 1/10W |
| R018 | 1-216-748-11 | s METAL, CHIP 39K 1% 1/10W |
| R032 | 1-216-700-11 | s METAL, CHIP 470K 1% 1/10W |
| R033 | 1-216-022-00 | s METAL, CHIP 75 5% 1/10W |
| R036 | 1-216-653-11 | s METAL, CHIP 1.2K 0.5% 1/10W |
| R037 | 1-216-661-11 | s METAL, CHIP 2.7K 0.5% 1/10W |
| R039 | 1-215-401-11 | s METAL 150 1% 1/6W |
| R052 | 1-216-078-00 | s METAL, CHIP 16K 5% 1/10W |
| R053 | 1-216-072-00 | s METAL, CHIP 9.1K 5% 1/10W |
| R062 | 1-216-677-11 | s METAL, CHIP 12K 0.5% 1/10W |
| R066 | 1-216-060-00 | s METAL, CHIP 3K 5% 1/10W |
| R067 | 1-216-058-00 | s METAL, CHIP 2.4K 5% 1/10W |
| R068 | 1-216-748-11 | s METAL, CHIP 39K 1% 1/10W |
| RV001 | 1-230-524-11 | s RES, ADJ, METAL 22K |
| RV002 | 1-230-521-11 | s RES, ADJ, METAL 2.2K |
| RV031 | 1-230-521-11 | s RES, ADJ, METAL 2.2K |
| RV032 | 1-230-529-11 | s RES, ADJ, METAL 470K |
| RV051 | 1-230-524-11 | s RES, ADJ, METAL 22K |
| RV052 | 1-230-521-11 | s RES, ADJ, METAL 2.2K |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

PD-19 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|--|--------------|---------------------------------|
| 1pc | A-7061-825-A | o MOUNTED CIRCUIT BOARD, PD-19 |
| All of the component parts on the PD-19 Board are supplied together with when you order MB-19 Board. | | |
| C853 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C856 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C858 | 1-135-145-11 | s TANTALUM, CHIP 0.47uF 10% 35V |
| C859 | 1-135-180-21 | s TANTALUM, CHIP 3.3uF 20% 10V |
| C860 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C870 | 1-163-115-00 | s CERAMIC, CHIP 82PF 5% 50V |
| C872 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C873 | 1-135-157-21 | s TANTALUM, CHIP 10uF 20% 6.3V |
| C875 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C876 | 1-163-005-11 | s CERAMIC, CHIP 470PF 10% 50V |
| C878 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C880 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| C889 | 1-135-156-21 | s TANTALUM, CHIP 6.8uF 10% 10V |
| CN851 | 1-565-107-21 | o CONNECTOR, ON BOARD (2MM) 35P |
| CN852 | 1-565-107-21 | o CONNECTOR, ON BOARD (2MM) 35P |
| CN853 | 1-506-777-11 | s CONNECTOR, BOARD TO BOARD 20P |
| D851 | 8-719-104-34 | s DIODE 1S2835 |
| D852 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D853 | 8-719-400-18 | s DIODE 1S2837-T1 |
| IC851 | 8-752-324-45 | s IC CXD1066Q-Z |
| IC852 | 8-759-929-17 | s IC CXD1051M |
| IC853 | 8-752-010-30 | s IC CX20103 |
| IC854 | 8-752-010-20 | s IC CX20102 |
| IC855 | 8-752-331-00 | s IC CXK5864BM-12L |
| IC856 | 8-759-948-61 | s IC CX23011-Z |
| IC857 | 8-759-911-19 | s IC CX23012 |
| IC858 | 8-759-972-12 | s IC CF77305FT |
| IC859 | 8-759-809-68 | s IC CXP5024H-079Q |
| IC860 | 8-759-972-13 | s IC CF77309FR |
| L851 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L852 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L853 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L855 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L856 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L857 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L858 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L859 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L860 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L861 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L862 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| Q851 | 8-729-102-06 | s TRANSISTOR 2SC2223 |
| Q851 | 8-729-102-07 | s TRANSISTOR 2SC2223-F13 |
| Q851 | 8-729-102-07 | s TRANSISTOR 2SC2223-F13 |
| Q852 | 8-729-122-63 | s TRANSISTOR 2SA1226 |
| Q852 | 8-729-122-63 | s TRANSISTOR 2SA1226 |
| Q853 | 8-729-102-06 | s TRANSISTOR 2SC2223 |
| Q853 | 8-729-102-07 | s TRANSISTOR 2SC2223-F13 |
| Q853 | 8-729-102-07 | s TRANSISTOR 2SC2223-F13 |
| RV851 | 1-230-869-11 | s RES, ADJ, METAL 4.7K |
| RV854 | 1-230-868-11 | s RES, ADJ, METAL 2.2K |
| X851 | 1-567-669-91 | s RESONATOR, LITHIUM |
| X852 | 1-567-346-11 | s RESONATOR, CERAMIC 0.5MHz |

PTC-32 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------------|
| 1pc | 1-564-026-00 | o CONTACT, FEMALE, AWG26-30 |
| 1pc | 1-622-638-11 | o PRINTED CIRCUIT BOARD, PTC-32 |
| C1 | 1-124-234-00 | s ELECT 22uF 20% 16V |
| IC1 | 8-719-939-50 | s PHOTOINTERRUPTER GP-1L52 |
| IC2 | 8-719-939-50 | s PHOTOINTERRUPTER GP-1L52 |
| IC3 | 8-719-940-86 | s PHOTOINTERRUPTER GP-1L53 |
| IC4 | 8-719-939-50 | s PHOTOINTERRUPTER GP-1L52 |
| IC5 | 8-759-133-90 | s IC UPC339C |

RM-83 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--------------------------------|
| 1pc | 1-635-086-11 | o PRINTED CIRCUIT BOARD, RM-83 |
| CN1001 | 1-563-890-21 | s CONNECTOR, D-SUB 9P, FEMALE |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

RP-73 BOARD

Ref. No.

or Q'ty Part No. SP Description

1pc A-7061-827-A o MOUNTED CIRCUIT BOARD, RP-73
All of the component parts on the RP-73 Board are
sypllied together with when you order FR-43 Board.

| | | |
|-------|--------------|---------------------------------|
| C001 | 1-162-974-11 | s CERAMIC, CHIP 0.01uF 50V |
| C002 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C003 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C005 | 1-164-330-21 | s CERAMIC, CHIP 0.22uF 5% 16V |
| C006 | 1-135-161-21 | s TANTALUM, CHIP 22uF 10% 10V |
| C007 | 1-163-077-00 | s CERAMIC, CHIP 0.1uF 25V |
| C008 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C009 | 1-135-161-21 | s TANTALUM, CHIP 22uF 10% 10V |
| C010 | 1-163-077-00 | s CERAMIC, CHIP 0.1uF 25V |
| C011 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C012 | 1-164-330-21 | s CERAMIC, CHIP 0.22uF 5% 16V |
| C013 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C015 | 1-162-974-11 | s CERAMIC, CHIP 0.01uF 50V |
| C016 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C017 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C020 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C021 | 1-162-974-11 | s CERAMIC, CHIP 0.01uF 50V |
| C022 | 1-135-091-00 | s TANTALUM, CHIP 1uF 10% 16V |
| C023 | 1-135-157-21 | s TANTALUM, CHIP 10uF 20% 6.3V |
| C024 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C025 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C027 | 1-135-091-00 | s TANTALUM, CHIP 1uF 10% 16V |
| C028 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C029 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C030 | 1-162-974-11 | s CERAMIC, CHIP 0.01uF 50V |
| C031 | 1-164-218-11 | s CERAMIC, CHIP 180PF 50V |
| C032 | 1-162-918-11 | s CERAMIC, CHIP 18PF 5% 50V |
| C033 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C034 | 1-162-912-11 | s CERAMIC, CHIP 7PF 50V |
| C035 | 1-162-974-11 | s CERAMIC, CHIP 0.01uF 50V |
| C036 | 1-164-218-11 | s CERAMIC, CHIP 180PF 50V |
| C037 | 1-162-918-11 | s CERAMIC, CHIP 18PF 5% 50V |
| C038 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C039 | 1-162-912-11 | s CERAMIC, CHIP 7PF 50V |
| C040 | 1-162-913-11 | s CERAMIC, CHIP 8PF 50V |
| C041 | 1-162-913-11 | s CERAMIC, CHIP 8PF 50V |
| C042 | 1-135-157-21 | s TANTALUM, CHIP 10uF 20% 6.3V |
| C043 | 1-135-157-21 | s TANTALUM, CHIP 10uF 20% 6.3V |
| C044 | 1-162-974-11 | s CERAMIC, CHIP 0.01uF 50V |
| D001 | 8-719-801-41 | s DIODE 1SS196 |
| D002 | 8-719-801-41 | s DIODE 1SS196 |
| IC001 | 8-752-033-00 | s IC CXA1234AR |
| L001 | 1-410-385-11 | s INDUCTOR, CHIP 22uH |
| L002 | 1-410-656-11 | s INDUCTOR, CHIP 150uH |
| L004 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L005 | 1-410-381-11 | s INDUCTOR, CHIP 10uH |
| L007 | 1-410-393-11 | s INDUCTOR, CHIP 100uH |
| L008 | 1-410-384-31 | s INDUCTOR, CHIP 18uH |
| L009 | 1-410-384-31 | s INDUCTOR, CHIP 18uH |
| Q002 | 8-729-102-07 | s TRANSISTOR 2SC2223-F13 |
| Q003 | 8-729-102-07 | s TRANSISTOR 2SC2223-F13 |
| R005 | 1-216-824-11 | s METAL, CHIP 1.8K 5% 1/16W |

(RP-73 BOARD)

Ref. No.

or Q'ty Part No. SP Description

| | | |
|-------|--------------|-----------------------------|
| R007 | 1-216-834-11 | s METAL, CHIP 12K 5% 1/16W |
| R008 | 1-216-835-11 | s METAL, CHIP 15K 5% 1/16W |
| R014 | 1-216-824-11 | s METAL, CHIP 1.8K 5% 1/16W |
| R026 | 1-216-837-11 | s METAL, CHIP 22K 5% 1/16W |
| R027 | 1-216-833-11 | s METAL, CHIP 10K 5% 1/16W |
| R028 | 1-216-797-11 | s METAL, CHIP 10 5% 1/16W |
| R029 | 1-216-812-11 | s METAL, CHIP 180 5% 1/16W |
| R030 | 1-216-837-11 | s METAL, CHIP 22K 5% 1/16W |
| R031 | 1-216-833-11 | s METAL, CHIP 10K 5% 1/16W |
| R032 | 1-216-797-11 | s METAL, CHIP 10 5% 1/16W |
| R033 | 1-216-812-11 | s METAL, CHIP 180 5% 1/16W |
| RV001 | 1-230-871-11 | s RES, ADJ, METAL 22K |
| RV002 | 1-230-871-11 | s RES, ADJ, METAL 22K |
| RV003 | 1-230-869-11 | s RES, ADJ, METAL 4.7K |
| RV004 | 1-230-869-11 | s RES, ADJ, METAL 4.7K |

NOTE: Please see pages 14-15 thru 14-18 for the parts that
are not listed in the parts list.

RP-103 BOARD

Ref. No.
or Q'ty Part No. SP Description

1pc A-7062-166-A o MOUNTED CIRCUIT BOARD, RP-103
All of the component parts on the RP-103 Board are
supplied together with when you order FR-43 Board.

| | | |
|-------|----------------|-------------------------------|
| C001 | 1-162-974-11 s | CERAMIC, CHIP 0.01uF 50V |
| C002 | 1-164-232-11 s | CERAMIC 0.01uF 10% 100V |
| C003 | 1-163-809-11 s | CERAMIC, CHIP 0.047uF 10% 25V |
| C005 | 1-164-330-21 s | CERAMIC, CHIP 0.22uF 5% 16V |
| C006 | 1-135-161-21 s | TANTALUM, CHIP 22uF 10% 10V |
| C007 | 1-163-077-00 s | CERAMIC, CHIP 0.1uF 25V |
| C008 | 1-164-232-11 s | CERAMIC 0.01uF 10% 100V |
| C009 | 1-135-161-21 s | TANTALUM, CHIP 22uF 10% 10V |
| C010 | 1-163-077-00 s | CERAMIC, CHIP 0.1uF 25V |
| C011 | 1-164-232-11 s | CERAMIC 0.01uF 10% 100V |
| C012 | 1-164-330-21 s | CERAMIC, CHIP 0.22uF 5% 16V |
| C013 | 1-163-809-11 s | CERAMIC, CHIP 0.047uF 10% 25V |
| C015 | 1-162-974-11 s | CERAMIC, CHIP 0.01uF 50V |
| C016 | 1-164-232-11 s | CERAMIC 0.01uF 10% 100V |
| C017 | 1-164-232-11 s | CERAMIC 0.01uF 10% 100V |
| C020 | 1-164-232-11 s | CERAMIC 0.01uF 10% 100V |
| C021 | 1-162-974-11 s | CERAMIC, CHIP 0.01uF 50V |
| C022 | 1-135-091-00 s | TANTALUM, CHIP 1uF 10% 16V |
| C023 | 1-135-157-21 s | TANTALUM, CHIP 10uF 20% 6.3V |
| C024 | 1-164-232-11 s | CERAMIC 0.01uF 10% 100V |
| C025 | 1-164-232-11 s | CERAMIC 0.01uF 10% 100V |
| C027 | 1-135-091-00 s | TANTALUM, CHIP 1uF 10% 16V |
| C029 | 1-163-809-11 s | CERAMIC, CHIP 0.047uF 10% 25V |
| C030 | 1-162-974-11 s | CERAMIC, CHIP 0.01uF 50V |
| C031 | 1-164-218-11 s | CERAMIC, CHIP 180PF 50V |
| C032 | 1-162-918-11 s | CERAMIC, CHIP 18PF 5% 50V |
| C033 | 1-163-809-11 s | CERAMIC, CHIP 0.047uF 10% 25V |
| C034 | 1-162-912-11 s | CERAMIC, CHIP 7PF 50V |
| C035 | 1-162-974-11 s | CERAMIC, CHIP 0.01uF 50V |
| C036 | 1-164-218-11 s | CERAMIC, CHIP 180PF 50V |
| C037 | 1-162-918-11 s | CERAMIC, CHIP 18PF 5% 50V |
| C038 | 1-163-809-11 s | CERAMIC, CHIP 0.047uF 10% 25V |
| C039 | 1-162-912-11 s | CERAMIC, CHIP 7PF 50V |
| C040 | 1-162-913-11 s | CERAMIC, CHIP 8PF 50V |
| C041 | 1-162-913-11 s | CERAMIC, CHIP 8PF 50V |
| C042 | 1-135-157-21 s | TANTALUM, CHIP 10uF 20% 6.3V |
| C043 | 1-135-157-21 s | TANTALUM, CHIP 10uF 20% 6.3V |
| C044 | 1-162-974-11 s | CERAMIC, CHIP 0.01uF 50V |
| D001 | 8-719-801-41 s | DIODE 1SS196 |
| D002 | 8-719-801-41 s | DIODE 1SS196 |
| IC001 | 8-752-033-00 s | IC CXA1234AR |
| L001 | 1-410-385-11 s | INDUCTOR, CHIP 22uH |
| L002 | 1-410-656-11 s | INDUCTOR, CHIP 150uH |
| L004 | 1-410-393-11 s | INDUCTOR, CHIP 100uH |
| L005 | 1-410-381-11 s | INDUCTOR, CHIP 10uH |
| L007 | 1-410-393-11 s | INDUCTOR, CHIP 100uH |
| L008 | 1-410-384-31 s | INDUCTOR, CHIP 18uH |
| L009 | 1-410-384-31 s | INDUCTOR, CHIP 18uH |
| Q002 | 8-729-102-07 s | TRANSISTOR 2SC2223-F13 |
| Q003 | 8-729-102-07 s | TRANSISTOR 2SC2223-F13 |
| R005 | 1-216-824-11 s | METAL, CHIP 1.8K 5% 1/16W |
| R007 | 1-216-836-11 s | METAL, CHIP 18K 5% 1/16W |

(RP-103 BOARD)

Ref. No.
or Q'ty Part No. SP Description

| | | |
|-------|----------------|---------------------------|
| R008 | 1-216-837-11 s | METAL, CHIP 22K 5% 1/16W |
| R014 | 1-216-824-11 s | METAL, CHIP 1.8K 5% 1/16W |
| R026 | 1-216-837-11 s | METAL, CHIP 22K 5% 1/16W |
| R027 | 1-216-833-11 s | METAL, CHIP 10K 5% 1/16W |
| R028 | 1-216-797-11 s | METAL, CHIP 10 5% 1/16W |
| R029 | 1-216-812-11 s | METAL, CHIP 180 5% 1/16W |
| R030 | 1-216-837-11 s | METAL, CHIP 22K 5% 1/16W |
| R031 | 1-216-833-11 s | METAL, CHIP 10K 5% 1/16W |
| R032 | 1-216-797-11 s | METAL, CHIP 10 5% 1/16W |
| R033 | 1-216-812-11 s | METAL, CHIP 180 5% 1/16W |
| RV002 | 1-230-871-11 s | RES, ADJ, METAL 22K |
| RV003 | 1-230-869-11 s | RES, ADJ, METAL 4.7K |
| RV004 | 1-230-869-11 s | RES, ADJ, METAL 4.7K |

RS-31 BOARD

Ref. No.
or Q'ty Part No. SP Description

| | | |
|-------|-----------------|------------------------------|
| 1pc | A-7061-818-A o | MOUNTED CIRCUIT BOARD, RS-31 |
| 1pc | 1-559-762-11 o | CABLE, FLAT 22P |
| 1pc | 3-712-410-01 s | HOLDER, RS |
| CN304 | 1-563-494-11 o | CONNECTOR, FPC 6P |
| CN305 | 1-565-211-11 o | CONNECTOR, FPC 22P |
| D320 | 8-719-800-76 s | DIODE 1SS226 |
| D321 | 8-719-800-76 s | DIODE 1SS226 |
| IC301 | 8-759-908-81 s | IC MB3763PF |
| IC302 | 8-759-908-81 s | IC MB3763PF |
| PH301 | 8-719-939-11 s | PHOTOINTERRUPTER GP-2S09-B |
| PH302 | 8-719-939-11 s | PHOTOINTERRUPTER GP-2S09-B |
| PH303 | 8-719-939-11 s | PHOTOINTERRUPTER GP-2S09-B |
| PS301 | △1-532-727-11 s | LINK, IC 0.25A |
| Q301 | 8-729-805-25 s | TRANSISTOR 2SB1121-S |
| Q302 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q303 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q304 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q305 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q306 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q307 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| R302 | 1-216-174-00 s | METAL, CHIP 100 5% 1/8W |
| R303 | 1-216-186-00 s | METAL, CHIP 330 5% 1/8W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that
are not listed in the parts list.

SE-10(P) BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---|
| 1pc | A-7062-167-A | o MOUNTED CIRCUIT BOARD, SE-10 (P) This board includes IG-4 Board. |
| C006 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C008 | 1-163-095-00 | s CERAMIC, CHIP 12PF 5% 50V |
| C009 | 1-163-095-00 | s CERAMIC, CHIP 12PF 5% 50V |
| C012 | 1-126-094-11 | s ELECT 4.7uF 20% 35V |
| C013 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C016 | 1-163-077-00 | s CERAMIC, CHIP 0.1uF 25V |
| C020 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C022 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C028 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C034 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C101 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C102 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C103 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C104 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C110 | 1-126-320-11 | s ELECT, NONPOLAR 10uF 20% 16V |
| C111 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C112 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C113 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C115 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C116 | 1-124-499-11 | s ELECT, NONPOLAR 1uF 20% 50V |
| C118 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C120 | 1-163-209-00 | s CERAMIC, CHIP 0.0015uF 5% 50V |
| C121 | 1-163-209-00 | s CERAMIC, CHIP 0.0015uF 5% 50V |
| C122 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C127 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C128 | 1-124-767-00 | s ELECT, NONPOLAR 2.2uF 20% 50V |
| C130 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C131 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C133 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C134 | 1-124-499-11 | s ELECT, NONPOLAR 1uF 20% 50V |
| C136 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C137 | 1-124-768-11 | s ELECT, NONPOLAR 4.7uF 20% 50V |
| C146 | 1-101-880-00 | s CERAMIC 47PF 5% 50V |
| C202 | 1-163-123-00 | s CERAMIC, CHIP 180PF 5% 50V |
| C205 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C206 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C208 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C209 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C210 | 1-124-234-00 | s ELECT 22uF 20% 16V |
| C211 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C212 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C213 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C214 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C215 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C217 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C218 | 1-163-989-11 | s CERAMIC, CHIP 0.033uF 10% 25V |
| C219 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C220 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C221 | 1-124-256-00 | s ELECT 1.5uF 20% 50V |
| C224 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C301 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C302 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C303 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C304 | 1-124-584-00 | s ELECT 100uF 20% 10V |
| C305 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C306 | 1-124-584-00 | s ELECT 100uF 20% 10V |

(SE-10(P) BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------------|
| C307 | 1-126-094-11 | s ELECT 4.7uF 20% 35V |
| C308 | 1-124-257-00 | s ELECT 2.2uF 20% 50V |
| C309 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C310 | 1-163-077-00 | s CERAMIC, CHIP 0.1uF 25V |
| C401 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C402 | 1-163-103-00 | s CERAMIC, CHIP 27PF 5% 50V |
| C403 | 1-126-094-11 | s ELECT 4.7uF 20% 35V |
| C404 | 1-126-094-11 | s ELECT 4.7uF 20% 35V |
| C405 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C408 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C409 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C412 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C503 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C504 | 1-124-257-00 | s ELECT 2.2uF 20% 50V |
| C506 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C508 | 1-124-589-11 | s ELECT 47uF 20% 16V |
| C601 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C604 | 1-124-589-11 | s ELECT 47uF 20% 16V |
| C606 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C607 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C608 | 1-163-809-11 | s CERAMIC, CHIP 0.047uF 10% 25V |
| C610 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C611 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C612 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C613 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C614 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C615 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C616 | 1-164-633-11 | s CERAMIC, CHIP 0.1uF 10% 25V |
| C617 | 1-164-232-11 | s CERAMIC 0.01uF 10% 100V |
| C620 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C621 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C622 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C623 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C624 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C625 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C626 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C627 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C628 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C629 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C630 | 1-163-009-11 | s CERAMIC, CHIP 0.001uF 10% 50V |
| C631 | 1-163-037-11 | s CERAMIC, CHIP 0.022uF 10% 25V |
| C632 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C633 | 1-102-963-00 | s CERAMIC 33PF 5% 50V |
| CN001 | 1-566-641-11 | o CONNECTOR, EL-BOW, 18P, MALE |
| CN002 | 1-566-941-11 | o CONNECTOR, EL-BOW, 30P, MALE |
| CN003 | 1-566-641-11 | o CONNECTOR, EL-BOW, 18P, MALE |
| CN004 | 1-566-943-11 | s CONNECTOR, BOARD TO BOARD 18P |
| CN005 | 1-566-944-11 | s CONNECTOR, BOARD TO BOARD 22P |
| CN011 | 1-565-212-11 | s CONNECTOR, FPC 26P |
| CN012 | 1-565-211-11 | o CONNECTOR, FPC 22P |
| D003 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D004 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D005 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D006 | 8-719-104-34 | s DIODE 1S2835 |
| D007 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D008 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D009 | 8-719-400-18 | s DIODE 1S2837-T1 |
| D012 | 8-719-400-18 | s DIODE 1S2837-T1 |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(SE-10(P) BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------------|---------------------|
| D013 | 8-719-400-18 s | DIODE 1S2837-T1 |
| D015 | 8-719-104-34 s | DIODE 1S2835 |
| D016 | 8-719-104-34 s | DIODE 1S2835 |
| D102 | 8-719-800-76 s | DIODE 1SS226 |
| D103 | 8-719-800-76 s | DIODE 1SS226 |
| D104 | 8-719-104-34 s | DIODE 1S2835 |
| D105 | 8-719-400-18 s | DIODE 1S2837-T1 |
| D106 | 8-719-400-18 s | DIODE 1S2837-T1 |
| D107 | 8-719-104-34 s | DIODE 1S2835 |
| D108 | 8-719-400-18 s | DIODE 1S2837-T1 |
| D109 | 8-719-400-18 s | DIODE 1S2837-T1 |
| D110 | 8-719-104-34 s | DIODE 1S2835 |
| D111 | 8-719-400-18 s | DIODE 1S2837-T1 |
| D112 | 8-719-104-34 s | DIODE 1S2835 |
| D201 | 8-719-400-18 s | DIODE 1S2837-T1 |
| D202 | 8-719-400-18 s | DIODE 1S2837-T1 |
| D203 | 8-719-105-82 s | DIODE RD5.1M-B2 |
| D203 | 8-719-105-83 s | DIODE RD5.1M-B3 |
| D301 | 8-719-400-18 s | DIODE 1S2837-T1 |
| D302 | 8-719-400-18 s | DIODE 1S2837-T1 |
| D401 | 8-719-800-76 s | DIODE 1SS226 |
| D701 | 8-719-400-18 s | DIODE 1S2837-T1 |
| FL201 | 1-235-611-21 s | FILTER, BANDPASS |
| FL202 | 1-235-612-21 s | FILTER, BANDPASS |
| IC001 | 8-752-816-72 s | IC CXP80116-692Q |
| IC002 | 8-752-816-09 s | IC CXP5048H-228Q |
| IC003 | 8-752-815-13 s | IC CXP5048H-222Q |
| IC004 | 8-759-144-21 s | IC UPD75106G-573-1B |
| IC007 | 8-759-208-15 s | IC TC4066BFHB |
| IC008 | 8-759-937-56 s | IC S-8054ALB-LM-S |
| IC101 | 8-752-003-50 s | IC CX20035 |
| IC102 | 8-759-803-47 s | IC LA5005M |
| IC103 | 8-759-925-66 s | IC BA6303F |
| IC104 | 8-759-981-75 s | IC RC3403AM |
| IC105 | 8-759-208-11 s | IC TC4053BFHB |
| IC106 | 8-759-971-25 s | IC MB674169U |
| IC107 | 8-759-100-94 s | IC UPC358G2 |
| IC108 | 8-759-208-15 s | IC TC4066BFHB |
| IC201 | 8-759-928-56 s | IC CXA1042M |
| IC202 | 8-759-100-95 s | IC UPC324G2 |
| IC203 | 8-759-208-11 s | IC TC4053BFHB |
| IC204 | 8-759-927-46 s | IC SN74HCOONS |
| IC301 | 8-759-100-94 s | IC UPC358G2 |
| IC302 | 8-759-208-11 s | IC TC4053BFHB |
| IC303 | 8-759-208-11 s | IC TC4053BFHB |
| IC304 | 8-759-200-90 s | IC TC4538BF |
| IC305 | 8-759-927-46 s | IC SN74HCOONS |
| IC601 | 8-759-996-78 s | IC BU3707F |
| IC602 | 8-759-927-52 s | IC BA7036LS |
| IC603 | 8-759-100-93 s | IC UPC393G2 |
| IC604 | 8-759-100-95 s | IC UPC324G2 |
| L001 | 1-408-777-00 s | INDUCTOR, CHIP 10uH |
| L002 | 1-408-777-00 s | INDUCTOR, CHIP 10uH |
| L003 | 1-408-777-00 s | INDUCTOR, CHIP 10uH |
| L101 | 1-408-777-00 s | INDUCTOR, CHIP 10uH |
| L401 | 1-408-777-00 s | INDUCTOR, CHIP 10uH |
| L402 | 1-408-777-00 s | INDUCTOR, CHIP 10uH |

(SE-10(P) BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|-----------------|---------------------|
| L403 | 1-408-783-00 s | INDUCTOR, CHIP 33uH |
| L404 | 1-408-777-00 s | INDUCTOR, CHIP 10uH |
| L501 | 1-408-777-00 s | INDUCTOR, CHIP 10uH |
| L601 | 1-408-777-00 s | INDUCTOR, CHIP 10uH |
| L602 | 1-408-777-00 s | INDUCTOR, CHIP 10uH |
| PS601 | A1-532-679-00 s | LINK, IC 0.6A |
| Q002 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q003 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q004 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q005 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q006 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q007 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q008 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q009 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q010 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q011 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q014 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q015 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q018 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q101 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q102 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q103 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q104 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q106 | 8-729-100-66 s | TRANSISTOR 2SC1623 |
| Q107 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q108 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q109 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q110 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q111 | 8-729-100-66 s | TRANSISTOR 2SC1623 |
| Q112 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q113 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q114 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q115 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q116 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q201 | 8-729-100-66 s | TRANSISTOR 2SC1623 |
| Q202 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q205 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q206 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q207 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q208 | 8-729-100-66 s | TRANSISTOR 2SC1623 |
| Q209 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q210 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q301 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q302 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q303 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q304 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q305 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q306 | 8-729-901-06 s | TRANSISTOR DTA144EK |
| Q307 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q308 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q309 | 8-729-901-01 s | TRANSISTOR DTC144EK |
| Q401 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q402 | 8-729-100-66 s | TRANSISTOR 2SC1623 |
| Q403 | 8-729-100-66 s | TRANSISTOR 2SC1623 |
| Q404 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q405 | 8-729-100-66 s | TRANSISTOR 2SC1623 |
| Q406 | 8-729-216-22 s | TRANSISTOR 2SA1162 |
| Q407 | 8-729-100-66 s | TRANSISTOR 2SC1623 |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(SE-10(P) BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-------------------------------|
| Q408 | 8-729-216-22 | s TRANSISTOR 2SA1162 |
| Q409 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q410 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q411 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q502 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q503 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q504 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q505 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q506 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q507 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q508 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q601 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q604 | 8-729-805-25 | s TRANSISTOR 2SB1121-S |
| Q605 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q606 | 8-729-900-65 | s TRANSISTOR DTA144ES |
| Q701 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q702 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q703 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q704 | 8-729-216-22 | s TRANSISTOR 2SA1162 |
| Q705 | 8-729-216-22 | s TRANSISTOR 2SA1162 |
| Q706 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q707 | 8-729-100-66 | s TRANSISTOR 2SC1623 |
| Q708 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q709 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q710 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q711 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q712 | 8-729-901-06 | s TRANSISTOR DTA144EK |
| Q713 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| Q714 | 8-729-901-01 | s TRANSISTOR DTC144EK |
| R020 | 1-216-687-11 | s METAL, CHIP 33K 0.5% 1/10W |
| R021 | 1-216-687-11 | s METAL, CHIP 33K 0.5% 1/10W |
| R022 | 1-216-687-11 | s METAL, CHIP 33K 0.5% 1/10W |
| R023 | 1-216-674-11 | s METAL, CHIP 9.1K 0.5% 1/10W |
| R076 | 1-216-080-00 | s METAL, CHIP 20K 5% 1/10W |
| R077 | 1-216-080-00 | s METAL, CHIP 20K 5% 1/10W |
| R078 | 1-216-080-00 | s METAL, CHIP 20K 5% 1/10W |
| R079 | 1-216-080-00 | s METAL, CHIP 20K 5% 1/10W |
| R080 | 1-216-080-00 | s METAL, CHIP 20K 5% 1/10W |
| R081 | 1-216-080-00 | s METAL, CHIP 20K 5% 1/10W |
| R082 | 1-216-080-00 | s METAL, CHIP 20K 5% 1/10W |
| R083 | 1-216-080-00 | s METAL, CHIP 20K 5% 1/10W |
| R084 | 1-216-080-00 | s METAL, CHIP 20K 5% 1/10W |
| R133 | 1-216-748-11 | s METAL, CHIP 39K 1% 1/10W |
| R137 | 1-216-663-11 | s METAL, CHIP 3.3K 0.5% 1/10W |
| R138 | 1-216-667-11 | s METAL, CHIP 4.7K 0.5% 1/10W |
| R151 | 1-216-082-00 | s METAL, CHIP 24K 5% 1/10W |
| R234 | 1-247-895-00 | s CARBON 470K 5% 1/4W |
| R413 | 1-216-052-00 | s METAL, CHIP 1.3K 5% 1/10W |
| R508 | 1-216-072-00 | s METAL, CHIP 9.1K 5% 1/10W |
| R553 | 1-216-748-11 | s METAL, CHIP 39K 1% 1/10W |
| R554 | 1-216-076-00 | s METAL, CHIP 13K 5% 1/10W |
| R562 | 1-216-090-00 | s METAL, CHIP 51K 5% 1/10W |
| R703 | 1-216-691-11 | s METAL, CHIP 47K 0.5% 1/10W |
| R704 | 1-216-693-11 | s METAL, CHIP 56K 0.5% 1/10W |
| R705 | 1-216-663-11 | s METAL, CHIP 3.3K 0.5% 1/10W |
| R706 | 1-216-697-11 | s METAL, CHIP 82K 0.5% 1/10W |
| R708 | 1-216-685-11 | s METAL, CHIP 27K 0.5% 1/10W |
| R709 | 1-216-689-11 | s METAL, CHIP 39K 0.5% 1/10W |
| R710 | 1-216-681-11 | s METAL, CHIP 18K 0.5% 1/10W |

(SE-10(P) BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-------------------------------|
| R711 | 1-216-673-11 | s METAL, CHIP 8.2K 0.5% 1/10W |
| R712 | 1-216-685-11 | s METAL, CHIP 27K 0.5% 1/10W |
| R713 | 1-216-689-11 | s METAL, CHIP 39K 0.5% 1/10W |
| R714 | 1-216-663-11 | s METAL, CHIP 3.3K 0.5% 1/10W |
| RV101 | 1-230-875-21 | s RES, ADJ, METAL 220K |
| RV102 | 1-230-875-21 | s RES, ADJ, METAL 220K |
| RV103 | 1-230-871-11 | s RES, ADJ, METAL 22K |
| RV104 | 1-230-871-11 | s RES, ADJ, METAL 22K |
| RV105 | 1-230-870-11 | s RES, ADJ, METAL 10K |
| RV106 | 1-230-870-11 | s RES, ADJ, METAL 10K |
| RV201 | 1-230-873-11 | s RES, ADJ, METAL 47K |
| RV203 | 1-230-869-11 | s RES, ADJ, METAL 4.7K |
| RV204 | 1-230-869-11 | s RES, ADJ, METAL 4.7K |
| RV301 | 1-230-868-11 | s RES, ADJ, METAL 2.2K |
| RV302 | 1-230-868-11 | s RES, ADJ, METAL 2.2K |
| RV303 | 1-230-869-11 | s RES, ADJ, METAL 4.7K |
| RV304 | 1-230-873-11 | s RES, ADJ, METAL 47K |
| X001 | 1-577-116-21 | s CRYSTAL 16MHz |
| X002 | 1-567-346-11 | s RESONATOR, CERAMIC 0.5MHz |
| X003 | 1-567-346-11 | s RESONATOR, CERAMIC 0.5MHz |
| X004 | 1-567-160-21 | s RESONATOR, CERAMIC 4.19MHz |
| X101 | 1-567-504-31 | s CRYSTAL 4.433619MHz |

SW-346 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------------|
| 1pc | 1-631-793-11 | o PRINTED CIRCUIT BOARD, SW-346 |
| CN224 | 1-506-471-11 | s CONNECTOR, 6P, MALE |
| R1 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R2 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| RV1 | 1-238-483-11 | s RES, VAR CARBON 5K |
| RV2 | 1-238-483-11 | s RES, VAR CARBON 5K |
| S1002 | 1-516-963-00 | s SWITCH, LEVER SLIDE |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

SW-347A BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------------|-------------------------------|
| 1pc | 1-631-794-11 o | PRINTED CIRCUIT BOARD, SW-347 |
| C1 | 1-124-589-11 s | ELECT 47uF 20% 16V |
| R3 | 1-249-411-11 s | CARBON 330 5% 1/4W |
| RV2 | 1-230-122-00 s | RES, VAR CARBON 100K |
| S1 | 1-554-481-00 s | SWITCH, SLIDE |
| S2 | 1-554-481-00 s | SWITCH, SLIDE |
| S3 | 1-571-908-11 s | SWITCH, SLIDE |
| S4 | 1-571-908-11 s | SWITCH, SLIDE |
| S5 | 1-554-481-00 s | SWITCH, SLIDE |

SW-348 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------------|-------------------------------|
| 1pc | 1-631-795-11 o | PRINTED CIRCUIT BOARD, SW-348 |
| S1007 | 1-516-961-00 s | SWITCH, LEVER SLIDE |

SY-145A BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------------|--------------------------------|
| 1pc | A-7062-151-A o | MOUNTED CIRCUIT BOARD, SY-145A |
| 1pc | 3-646-090-00 s | RIVET, NYLON |
| 1pc | 3-657-153-00 o | HINGE |
| 1pc | 7-682-903-01 s | SCREW +PWH 3X5 |
| C1 | 1-130-487-00 s | MYLAR 0.022uF 5% 50V |
| C2 | 1-162-207-31 s | CERAMIC 22PF 5% 50V |
| C3 | 1-130-487-00 s | MYLAR 0.022uF 5% 50V |
| C4 | 1-162-207-31 s | CERAMIC 22PF 5% 50V |
| C5 | 1-162-210-31 s | CERAMIC 30PF 5% 50V |
| C6 | 1-162-210-31 s | CERAMIC 30PF 5% 50V |
| C8 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C9 | 1-161-051-00 s | CERAMIC 0.01uF 10% 50V |
| C10 | 1-126-233-11 s | ELECT 22uF 20% 50V |
| C12 | 1-131-349-00 s | TANTALUM 2.2uF 10% 35V |
| C14 | 1-124-927-11 s | ELECT 4.7uF 20% 100V |
| C15 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C16 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C17 | 1-107-085-00 s | MICA 100PF 5% 50V |
| C18 | 1-107-085-00 s | MICA 100PF 5% 50V |
| C19 | 1-162-282-31 s | CERAMIC 100PF 10% 50V |
| C20 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C21 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C23 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C25 | 1-161-055-00 s | CERAMIC 0.022uF 10% 50V |
| C26 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C27 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C29 | 1-107-085-00 s | MICA 100PF 5% 50V |
| C30 | 1-107-085-00 s | MICA 100PF 5% 50V |
| C31 | 1-162-282-31 s | CERAMIC 100PF 10% 50V |
| C100 | 1-162-282-31 s | CERAMIC 100PF 10% 50V |
| C101 | 1-130-471-00 s | MYLAR 0.001uF 5% 50V |
| C102 | 1-130-473-00 s | MYLAR 0.0015uF 5% 50V |
| C103 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C104 | 1-107-159-00 s | MICA 33PF 5% 500V |
| C105 | 1-130-471-00 s | MYLAR 0.001uF 5% 50V |
| C106 | 1-130-477-00 s | MYLAR 0.0033uF 5% 50V |
| C108 | 1-130-475-00 s | MYLAR 0.0022uF 5% 50V |
| C109 | 1-162-294-31 s | CERAMIC 0.001uF 10% 50V |
| C110 | 1-162-288-31 s | CERAMIC 330PF 10% 50V |
| C112 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C115 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C116 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C117 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C118 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C204 | 1-124-234-00 s | ELECT 22uF 20% 16V |
| C206 | 1-130-471-00 s | MYLAR 0.001uF 5% 50V |
| C207 | 1-130-477-00 s | MYLAR 0.0033uF 5% 50V |
| C208 | 1-162-294-31 s | CERAMIC 0.001uF 10% 50V |
| C209 | 1-130-475-00 s | MYLAR 0.0022uF 5% 50V |
| C210 | 1-162-288-31 s | CERAMIC 330PF 10% 50V |
| C212 | 1-126-157-11 s | ELECT 10uF 20% 16V |
| C213 | 1-162-210-31 s | CERAMIC 30PF 5% 50V |
| C214 | 1-162-210-31 s | CERAMIC 30PF 5% 50V |
| C215 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C217 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C218 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C219 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |
| C220 | 1-130-491-00 s | MYLAR 0.047uF 5% 50V |
| C221 | 1-161-379-00 s | CERAMIC 0.01uF 20% 25V |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(SY-145A BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--------------------------|
| C222 | 1-130-475-00 | s MYLAR 0.0022uF 5% 50V |
| C223 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C307 | 1-162-210-31 | s CERAMIC 30PF 5% 50V |
| C308 | 1-162-210-31 | s CERAMIC 30PF 5% 50V |
| C309 | 1-130-471-00 | s MYLAR 0.001uF 5% 50V |
| C310 | 1-130-471-00 | s MYLAR 0.001uF 5% 50V |
| C312 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C313 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C314 | 1-162-290-31 | s CERAMIC 470PF 10% 50V |
| C316 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C317 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C318 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C319 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C320 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C321 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C322 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C323 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C324 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C325 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C326 | 1-130-490-11 | s MYLAR 0.039uF 5% 50V |
| C327 | 1-162-282-31 | s CERAMIC 100PF 10% 50V |
| C328 | 1-102-112-00 | s CERAMIC 330PF 10% 50V |
| C329 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| C400 | 1-102-110-00 | s CERAMIC 220PF 10% 50V |
| CN509 | 1-506-471-11 | s CONNECTOR, 6P, MALE |
| CNI2 | 1-526-659-00 | o SOCKET, IC 28P |
| CV100 | 1-141-389-11 | s CAP, TRIMMER 50PF |
| D1 | 8-719-911-19 | s DIODE 1SS119 |
| D2 | 8-719-911-19 | s DIODE 1SS119 |
| D3 | 8-719-911-19 | s DIODE 1SS119 |
| D5 | 8-719-911-19 | s DIODE 1SS119 |
| D6 | 8-719-911-19 | s DIODE 1SS119 |
| D201 | 8-719-911-19 | s DIODE 1SS119 |
| D202 | 8-719-911-19 | s DIODE 1SS119 |
| D203 | 8-719-911-19 | s DIODE 1SS119 |
| D301 | 8-719-911-19 | s DIODE 1SS119 |
| D302 | 8-719-911-19 | s DIODE 1SS119 |
| D304 | 8-719-911-19 | s DIODE 1SS119 |
| IC1 | 8-759-208-86 | s IC TMPZ84C011AF-6 |
| IC2 | 8-759-746-99 | s IC MBM27C512-25 |
| IC3 | 8-752-331-06 | s IC CXK5864PN-12L |
| IC4 | 8-752-323-26 | s IC CXK1009P |
| IC5 | 8-759-916-84 | s IC LH0084A |
| IC6 | 8-759-938-68 | s IC CXD1095Q |
| IC7 | 8-759-916-94 | s IC SN74HC373N |
| IC8 | 8-759-045-38 | s IC MC14538BCP |
| IC9 | 8-759-916-14 | s IC SN74HC04N |
| IC10 | 8-759-917-46 | s IC 74F11PC |
| IC11 | 8-759-240-69 | s IC TC4069UBP |
| IC12 | 8-759-008-57 | s IC MC34051P |
| IC13 | 8-759-916-25 | s IC SN74HC32N |
| IC14 | 8-759-916-46 | s IC SN74HC139N |
| IC15 | 8-759-916-14 | s IC SN74HC04N |
| IC16 | 8-759-146-83 | s IC UPD7564CS-110 |
| IC17 | 8-759-904-83 | s IC 74F32PC |
| IC18 | 8-759-916-20 | s IC SN74HC14N |

(SY-145A BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|---------------|------------------------|
| IC19 | 8-759-803-70 | s IC SN74HC08N |
| IC100 | 8-759-908-23 | s IC MB88303 |
| IC101 | 8-759-045-38 | s IC MC14538BCP |
| IC102 | 8-759-045-38 | s IC MC14538BCP |
| IC103 | 8-759-981-64 | s IC LM2903DQ |
| IC104 | 8-759-000-27 | s IC MC14017BCP |
| IC105 | 8-759-916-29 | s IC SN74HC74N |
| IC106 | 8-759-045-38 | s IC MC14538BCP |
| IC107 | 8-759-340-13 | s IC HD14013BP |
| IC200 | 8-743-915-10 | s IC BX3915A |
| IC201 | 8-759-981-64 | s IC LM2903DQ |
| IC202 | 8-759-000-27 | s IC MC14017BCP |
| IC203 | 8-759-045-38 | s IC MC14538BCP |
| IC204 | 8-759-984-95 | s IC MB88201H-652M |
| IC300 | 8-759-505-44 | s IC MB88505H-1226M |
| IC301 | 8-759-916-21 | s IC SN74HC20N |
| IC302 | 8-759-203-05 | s IC TC74HC193P |
| IC303 | 8-759-203-05 | s IC TC74HC193P |
| IC304 | 8-759-916-25 | s IC SN74HC32N |
| IC305 | 8-759-916-29 | s IC SN74HC74N |
| IC306 | 8-759-240-71 | s IC TC4071BP |
| IC307 | 8-759-916-20 | s IC SN74HC14N |
| IC308 | 8-759-803-70 | s IC SN74HC08N |
| IC309 | 8-759-916-21 | s IC SN74HC20N |
| IC310 | 8-759-916-20 | s IC SN74HC14N |
| PS1 | A1-532-679-00 | s LINK, IC 0.6A |
| Q1 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q2 | 8-729-900-65 | s TRANSISTOR DTA144ES |
| Q3 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q4 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q6 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q7 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q8 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q9 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q10 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q11 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q12 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q13 | 8-729-178-55 | s TRANSISTOR 2SC2785-E |
| Q14 | 8-729-900-65 | s TRANSISTOR DTA144ES |
| Q15 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q201 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q202 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q203 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q204 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q205 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q206 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q207 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q301 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q302 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q303 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| R1 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R2 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R3 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R4 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R5 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R6 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R7 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R8 | 1-249-437-11 | s CARBON 47K 5% 1/4W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(SY-145A BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-----------------------|
| R9 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R10 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R11 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R12 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R13 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R14 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R15 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R16 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R17 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R18 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R19 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R20 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R21 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R22 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R24 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R25 | 1-249-411-11 | s CARBON 330 5% 1/4W |
| R26 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R27 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R28 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R29 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R30 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R31 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R32 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R33 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R34 | 1-249-435-11 | s CARBON 33K 5% 1/4W |
| R35 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R36 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R37 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R38 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R39 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R40 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R41 | 1-247-903-00 | s CARBON 1M 5% 1/4W |
| R42 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R43 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R44 | 1-247-903-00 | s CARBON 1M 5% 1/4W |
| R45 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R46 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R47 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R48 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R49 | 1-249-422-11 | s CARBON 2.7K 5% 1/4W |
| R50 | 1-249-410-11 | s CARBON 270 5% 1/4W |
| R51 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R52 | 1-249-419-11 | s CARBON 1.5K 5% 1/4W |
| R53 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R54 | 1-249-419-11 | s CARBON 1.5K 5% 1/4W |
| R56 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R57 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R58 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R59 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R60 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R61 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R62 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R63 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R64 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R65 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R66 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R67 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R69 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R70 | 1-249-405-11 | s CARBON 100 5% 1/4W |

(SY-145A BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-----------------------|
| R71 | 1-249-427-11 | s CARBON 6.8K 5% 1/4W |
| R72 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R73 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R74 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R75 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R76 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R77 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R78 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R79 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R80 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R81 | 1-247-881-00 | s CARBON 120K 5% 1/4W |
| R82 | 1-247-881-00 | s CARBON 120K 5% 1/4W |
| R83 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R84 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R100 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R101 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R102 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R104 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R106 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R107 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R108 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R109 | 1-215-460-00 | s METAL 43K 1% 1/6W |
| R111 | 1-249-434-11 | s CARBON 27K 5% 1/4W |
| R112 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R113 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R114 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R115 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R116 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R118 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R119 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R120 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R150 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R200 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R202 | 1-249-435-11 | s CARBON 33K 5% 1/4W |
| R207 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R208 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R209 | 1-249-409-11 | s CARBON 220 5% 1/4W |
| R210 | 1-249-427-11 | s CARBON 6.8K 5% 1/4W |
| R211 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R212 | 1-215-460-00 | s METAL 43K 1% 1/6W |
| R213 | 1-249-434-11 | s CARBON 27K 5% 1/4W |
| R214 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R215 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R217 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R218 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R219 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R221 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R222 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R223 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R224 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R225 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R227 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R228 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R229 | 1-215-482-00 | s METAL 360K 1% 1/6W |
| R230 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R231 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R301 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R302 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R303 | 1-249-429-11 | s CARBON 10K 5% 1/4W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(SY-145A BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|------------------------------|
| R321 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R322 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R323 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R327 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R336 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R337 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R338 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R339 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R343 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R347 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R348 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R349 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R350 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R351 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R352 | 1-247-881-00 | s CARBON 120K 5% 1/4W |
| R355 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R356 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R357 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R358 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R359 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R360 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R361 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R363 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R364 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R365 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R366 | 1-215-445-00 | s METAL 10K 1% 1/6W |
| R367 | 1-215-469-00 | s METAL 100K 1% 1/6W |
| RB3 | 1-231-410-00 | s RESISTOR BLOCK 10Kx8 |
| RB6 | 1-235-109-00 | s RESISTOR BLOCK 22Kx8 |
| RB10 | 1-231-410-00 | s RESISTOR BLOCK 10Kx8 |
| RV1 | 1-230-499-11 | s RES, ADJ METAL 100K |
| RV2 | 1-237-505-21 | s RES, ADJ, METAL 50K |
| X1 | 1-567-870-11 | s RESONATOR, CERAMIC 614KHz |
| X2 | 1-567-132-00 | s RESONATOR, CERAMIC 8.00MHz |
| X3 | 1-567-870-11 | s RESONATOR, CERAMIC 614KHz |
| X4 | 1-567-132-00 | s RESONATOR, CERAMIC 8.00MHz |
| X5 | 1-567-132-00 | s RESONATOR, CERAMIC 8.00MHz |

TS-74(LEFT) BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------------------|
| 1pc | A-7070-628-A | o MOUNTED CIRCUIT BOARD, TS-74 (LEFT) |
| Q715 | 8-729-700-11 | s NJL7141E-N |

TS-74(RIGHT) BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------------------|
| 1pc | A-7070-627-A | o MOUNTED CIRCUIT BOARD, TS-74 (LEFT) |
| Q715 | 8-729-700-11 | s NJL7141E-N |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

UR-14E BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|---------------|-------------------------------|
| 1 | △1-413-249-12 | s SWITCHING REGULATOR, UR-14E |
| C101 | △1-161-742-00 | s CERAMIC 2200PF 20% 400V |
| C102 | △1-161-742-00 | s CERAMIC 2200PF 20% 400V |
| C103 | △1-161-742-00 | s CERAMIC 2200PF 20% 400V |
| C104 | △1-161-742-00 | s CERAMIC 2200PF 20% 400V |
| C105 | △1-136-185-00 | s FILM 0.22uF 20% 250V |
| C106 | △1-136-185-00 | s FILM 0.22uF 20% 250V |
| C107 | △1-161-742-00 | s CERAMIC 2200PF 20% 400V |
| C108 | △1-161-742-00 | s CERAMIC 2200PF 20% 400V |
| C109 | 1-124-961-00 | s ELECT 220 20% 200V |
| C110 | 1-124-023-00 | s ELECT 4.7 20% 350V |
| C111 | 1-124-023-00 | s ELECT 4.7 20% 350V |
| C112 | 1-124-549-00 | s ELECT 100 20% 10V |
| C113 | 1-124-961-00 | s ELECT 220 20% 200V |
| C114 | 1-124-549-00 | s ELECT 100 20% 10V |
| C201 | 1-106-351-00 | s MYLAR 0.0022 5% 200V |
| C202 | 1-106-351-00 | s MYLAR 0.0022 5% 200V |
| C203 | 1-161-825-11 | s CERAMIC 220PF 10% 500V |
| C204 | 1-161-825-11 | s CERAMIC 220PF 10% 500V |
| C205 | 1-161-825-11 | s CERAMIC 220PF 10% 500V |
| C206 | 1-161-825-11 | s CERAMIC 220PF 10% 500V |
| C207 | 1-123-357-00 | s ELECT 22 20% 50V |
| C209 | 1-106-351-00 | s MYLAR 0.0022 5% 200V |
| C210 | 1-136-153-00 | s MYLAR 0.01 5% 50V |
| C211 | 1-106-351-00 | s MYLAR 0.0022 5% 200V |
| C212 | 1-124-556-00 | s ELECT 2200 20% 16V |
| C213 | 1-124-556-00 | s ELECT 2200 20% 16V |
| C214 | 1-124-556-00 | s ELECT 2200 20% 16V |
| C215 | 1-124-556-00 | s ELECT 2200 20% 16V |
| C216 | 1-123-326-00 | s ELECT 3300 20% 16V |
| C217 | 1-123-332-00 | s ELECT 47 20% 50V |
| C651 | 1-124-445-00 | s ELECT 100 20% 16V |
| C652 | 1-130-591-11 | s MYLAR 3300PF 2% 100V |
| C653 | 1-136-141-00 | s MYLAR 1000PF 10% 50V |
| C654 | 1-136-165-00 | s MYLAR 0.1 5% 50V |
| C655 | 1-123-318-00 | s ELECT 33 16V |
| CN101 | △1-560-436-00 | o RECEPTACLE, 3P |
| | △1-561-218-11 | o HOUSING, 3P |
| | △1-561-254-11 | o CONTACT |
| CN201 | 1-560-438-00 | o RECEPTACLE, 5P |
| | 1-561-424-11 | o HOUSING, 5P |
| | 1-561-432-11 | o CONTACT |
| D101 | 8-719-300-00 | s LB-156 |
| D201 | 8-719-908-00 | s ESAC33-02CS |
| D202 | 8-719-908-00 | s ESAC33-02CS |
| D203 | 8-719-900-93 | s V09C |
| D204 | 8-719-900-93 | s V09C |
| D205 | 8-719-815-55 | s 1S1555 |
| D206 | 8-719-100-61 | s RD11EB2 |
| D208 | 8-719-101-67 | s RD7.5EL2 |
| D209 | 8-719-100-30 | s RD5.1EB2 |
| D210 | 8-719-100-30 | s RD5.1EB2 |
| D651 | 8-719-200-02 | s 10E-2 |
| D652 | 8-719-100-70 | s RD15EB1 |
| D653 | 8-719-815-55 | s 1S1555 |
| FB101 | 1-543-060-00 | s CORE |

(UR-14E BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|---------------|--------------------------|
| FB102 | 1-543-060-00 | s CORE |
| FB201 | 1-543-060-00 | s CORE |
| FB202 | 1-543-060-00 | s CORE |
| FB203 | 1-543-060-00 | s CORE |
| FB204 | 1-543-060-00 | s CORE |
| FB205 | 1-543-060-00 | s CORE |
| FB206 | 1-543-060-00 | s CORE |
| FB207 | 1-543-060-00 | s CORE |
| FB208 | 1-543-060-00 | s CORE |
| IC651 | 8-759-937-00 | s MB3759 |
| L101 | △1-421-848-11 | s LINE FILTER |
| L201 | 1-421-849-11 | s CHOKE, 2.4 mH |
| L203 | 1-408-316-00 | s CHOKE |
| L204 | 1-421-850-11 | s CHOKE, 12 |
| L205 | 1-421-329-00 | s CHOKE |
| Q101 | 8-729-901-72 | s 2SC3317 |
| Q102 | 8-729-901-72 | s 2SC3317 |
| Q103 | 8-729-100-13 | s 2SC2001 |
| Q104 | 8-729-100-13 | s 2SC2001 |
| Q201 | 8-729-606-34 | s 2SC2603-G |
| Q202 | 8-729-117-54 | s 2SA1175-F |
| R101 | 1-214-947-00 | s METAL 2.7M 1% 1/2W |
| R102 | △1-205-636-11 | s CEMENT 3.3 5% 5W |
| R103 | 1-246-529-00 | s CARBON 220k 5% 1/4W |
| R104 | 1-246-529-00 | s CARBON 220k 5% 1/4W |
| R105 | △1-212-934-00 | s METAL 1 5% 1/2W |
| R106 | 1-247-700-11 | s NF CARBON 100 5% 1/4W |
| R107 | 1-246-529-00 | s CARBON 220k 5% 1/4W |
| R108 | 1-246-529-00 | s CARBON 220k 5% 1/4W |
| R109 | △1-212-934-00 | s METAL 1 5% 1/2W |
| R110 | 1-247-700-11 | s NF CARBON 100 5% 1/4W |
| R201 | △1-206-475-00 | s METAL 33 5% 2W |
| R202 | 1-535-369-00 | s SHUNT 0.02 2W |
| R203 | △1-213-151-00 | s METAL 4.7k 5% 5W |
| R204 | 1-247-713-11 | s NF CARBON 1k 5% 1/4W |
| R205 | 1-247-719-11 | s NF CARBON 3.3k 5% 1/4W |
| R206 | 1-249-455-11 | s NF CARBON 4.7k 5% 1/4W |
| R207 | 1-247-717-11 | s NF CARBON 2.2k 5% 1/4W |
| R208 | 1-247-123-00 | s NF CARBON 470 5% 1/4W |
| R209 | 1-247-704-11 | s NF CARBON 220 5% 1/4W |
| R212 | 1-247-857-00 | s NF CARBON 220 5% 1/2W |
| R651 | 1-249-425-11 | s NF CARBON 4.7k 5% 1/6W |
| RV651 | 1-228-644-00 | s VAR, METAL 1k 0.3W |
| T101 | △1-448-423-11 | s CONVERTER |
| T102 | △1-437-120-00 | s DRIVE |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

VO-30 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--------------------------------|
| 1pc | A-7062-152-A | o MOUNTED CIRCUIT BOARD, VO-30 |
| 1pc | 3-646-090-00 | s RIVET, NYLON |
| 1pc | 3-657-153-00 | o HINGE |
| 1pc | 3-738-963-01 | o CASE, SHIELD, VO |
| 1pc | 7-682-903-01 | s SCREW +PWH 3X5 |
| C3 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C6 | 1-161-021-11 | s CERAMIC 0.047uF 10% 25V |
| C7 | 1-130-499-00 | s MYLAR 0.22uF 5% 50V |
| C11 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C12 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C13 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C14 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C15 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C16 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C17 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C19 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C20 | 1-124-360-00 | s ELECT 1000uF 20% 16V |
| C22 | 1-107-202-00 | s MICA 10PF 5% 500V |
| C23 | 1-107-045-00 | s MICA 3.9PF 500V |
| C24 | 1-126-176-11 | s ELECT 220uF 20% 10V |
| C25 | 1-130-471-00 | s MYLAR 0.001uF 5% 50V |
| C26 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C38 | 1-107-085-00 | s MICA 100PF 5% 50V |
| C39 | 1-161-021-11 | s CERAMIC 0.047uF 10% 25V |
| C40 | 1-161-051-00 | s CERAMIC 0.01uF 10% 50V |
| C51 | 1-107-157-00 | s MICA 27PF 5% 500V |
| C54 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C55 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C56 | 1-161-021-11 | s CERAMIC 0.047uF 10% 25V |
| C57 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C58 | 1-107-159-00 | s MICA 33PF 5% 500V |
| C59 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C60 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C61 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C62 | 1-161-021-11 | s CERAMIC 0.047uF 10% 25V |
| C63 | 1-162-875-11 | s CERAMIC 68PF 5% 50V |
| C65 | 1-161-021-11 | s CERAMIC 0.047uF 10% 25V |
| C102 | 1-107-085-00 | s MICA 100PF 5% 50V |
| C103 | 1-131-341-00 | s TANTALUM 0.1uF 10% 35V |
| C104 | 1-162-726-11 | s CERAMIC 470PF 1% 50V |
| C105 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| C108 | 1-107-085-00 | s MICA 100PF 5% 50V |
| C109 | 1-130-499-00 | s MYLAR 0.22uF 5% 50V |
| C111 | 1-107-159-00 | s MICA 33PF 5% 500V |
| C113 | 1-107-085-00 | s MICA 100PF 5% 50V |
| C118 | 1-130-487-00 | s MYLAR 0.022uF 5% 50V |
| C200 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C202 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C205 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C206 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C210 | 1-124-360-00 | s ELECT 1000uF 20% 16V |
| C212 | 1-130-487-00 | s MYLAR 0.022uF 5% 50V |
| C301 | 1-162-726-11 | s CERAMIC 470PF 1% 50V |
| C309 | 1-161-051-00 | s CERAMIC 0.01uF 10% 50V |
| C325 | 1-107-209-00 | s MICA 20PF 5% 500V |
| C328 | 1-107-210-00 | s MICA 22PF 5% 500V |
| C329 | 1-107-207-00 | s MICA 16PF 5% 500V |
| C405 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C406 | 1-161-494-00 | s CERAMIC 0.022uF 25V |

(VO-30 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------|
| C408 | 1-124-438-00 | s ELECT 1uF 20% 50V |
| C409 | 1-109-631-00 | s MICA 330PF 2% 500V |
| C410 | 1-130-483-00 | s MYLAR 0.01uF 5% 50V |
| C411 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C412 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C414 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C415 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C417 | 1-126-176-11 | s ELECT 220uF 20% 10V |
| C419 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C420 | 1-107-158-00 | s MICA 30PF 5% 500V |
| C422 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C423 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C424 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C425 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C426 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C427 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C428 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C429 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C430 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C431 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C433 | 1-130-479-00 | s MYLAR 0.0047uF 5% 50V |
| C434 | 1-130-471-00 | s MYLAR 0.001uF 5% 50V |
| C501 | 1-107-075-00 | s MICA 39PF 5% 50V |
| C502 | 1-107-085-00 | s MICA 100PF 5% 50V |
| C503 | 1-109-541-00 | s MICA 200PF 5% 100V |
| C504 | 1-109-627-00 | s MICA 150PF 2% 500V |
| C505 | 1-130-471-00 | s MYLAR 0.001uF 5% 50V |
| C506 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C507 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C509 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C510 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C511 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C513 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C514 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C515 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C516 | 1-130-471-00 | s MYLAR 0.001uF 5% 50V |
| C517 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C518 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C519 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C520 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C522 | 1-124-438-00 | s ELECT 1uF 20% 50V |
| C523 | 1-107-208-00 | s MICA 18PF 5% 500V |
| C525 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C526 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C527 | 1-130-487-00 | s MYLAR 0.022uF 5% 50V |
| C528 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C529 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C530 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C600 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C602 | 1-124-438-00 | s ELECT 1uF 20% 50V |
| C603 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C604 | 1-161-021-11 | s CERAMIC 0.047uF 10% 25V |
| C606 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C607 | 1-161-051-00 | s CERAMIC 0.01uF 10% 50V |
| C608 | 1-161-051-00 | s CERAMIC 0.01uF 10% 50V |
| C650 | 1-107-159-00 | s MICA 33PF 5% 500V |
| C651 | 1-109-542-00 | s MICA 220PF 5% 100V |
| C652 | 1-109-541-00 | s MICA 200PF 5% 100V |
| C653 | 1-109-541-00 | s MICA 200PF 5% 100V |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(VO-30 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|---------------------------|
| C654 | 1-130-479-00 | s MYLAR 0.0047uF 5% 50V |
| C655 | 1-107-084-00 | s MICA 91PF 5% 50V |
| C656 | 1-130-483-00 | s MYLAR 0.01uF 5% 50V |
| C658 | 1-161-494-00 | s CERAMIC 0.022uF 25V |
| C659 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C661 | 1-107-076-00 | s MICA 43PF 5% 50V |
| C663 | 1-107-210-00 | s MICA 22PF 5% 500V |
| C664 | 1-107-048-00 | s MICA 6.8PF 500V |
| C665 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C666 | 1-107-202-00 | s MICA 10PF 5% 500V |
| C668 | 1-161-021-11 | s CERAMIC 0.047uF 10% 25V |
| C669 | 1-161-379-00 | s CERAMIC 0.01uF 20% 25V |
| C670 | 1-107-165-00 | s MICA 56PF 5% 50V |
| C671 | 1-107-085-00 | s MICA 100PF 5% 50V |
| C672 | 1-107-202-00 | s MICA 10PF 5% 500V |
| C673 | 1-124-438-00 | s ELECT 1uF 20% 50V |
| C674 | 1-124-438-00 | s ELECT 1uF 20% 50V |
| C675 | 1-161-021-11 | s CERAMIC 0.047uF 10% 25V |
| C677 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C681 | 1-126-157-11 | s ELECT 10uF 20% 16V |
| C682 | 1-107-210-00 | s MICA 22PF 5% 500V |
| CN303 | 1-506-471-11 | s CONNECTOR, 6P, MALE |
| CN310 | 1-506-471-11 | s CONNECTOR, 6P, MALE |
| CV500 | 1-141-246-00 | s CAP, TRIMMER 20PF |
| CV650 | 1-141-246-00 | s CAP, TRIMMER 20PF |
| D1 | 8-719-101-97 | s DIODE 1SS97-1 |
| D2 | 8-719-101-97 | s DIODE 1SS97-1 |
| D3 | 8-719-101-97 | s DIODE 1SS97-1 |
| D4 | 8-719-101-97 | s DIODE 1SS97-1 |
| D100 | 8-719-110-13 | s DIODE RD9.1ES-B2 |
| D101 | 8-719-911-19 | s DIODE 1SS119 |
| D200 | 8-719-104-10 | s DIODE 1SS99 |
| D201 | 8-719-104-10 | s DIODE 1SS99 |
| D301 | 8-719-911-19 | s DIODE 1SS119 |
| D400 | 8-719-911-19 | s DIODE 1SS119 |
| D401 | 8-719-911-19 | s DIODE 1SS119 |
| D402 | 8-719-104-10 | s DIODE 1SS99 |
| D403 | 8-719-104-10 | s DIODE 1SS99 |
| D404 | 8-719-104-10 | s DIODE 1SS99 |
| D405 | 8-719-104-10 | s DIODE 1SS99 |
| D406 | 8-719-911-19 | s DIODE 1SS119 |
| D407 | 8-719-911-19 | s DIODE 1SS119 |
| D500 | 8-719-911-19 | s DIODE 1SS119 |
| DL2 | 1-415-551-11 | s DELAY LINE 140NS |
| DL301 | 1-415-404-21 | s DELAY LINE 226uS |
| DL500 | 1-415-402-11 | s DELAY LINE 300nS |
| FL201 | 1-409-410-11 | s FILTER, TRAP 4.4MHZ |
| FL300 | 1-236-040-11 | s FILTER, LOW-PASS |
| FL500 | 1-235-471-11 | s FILTER, LOW-PASS |
| IC1 | 8-752-006-12 | s IC CX20061 |
| IC2 | 8-759-206-29 | s IC TA7060AP-SONY |
| IC3 | 8-759-402-33 | s IC AN607P |
| IC4 | 8-752-201-30 | s IC CX22013 |
| IC5 | 8-743-880-00 | s IC BX-388 |
| IC6 | 8-743-890-00 | s IC BX-389 |
| IC51 | 8-743-890-00 | s IC BX-389 |

(VO-30 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|------------------------|
| IC52 | 8-759-206-29 | s IC TA7060AP-SONY |
| IC53 | 8-759-206-29 | s IC TA7060AP-SONY |
| IC100 | 8-759-201-47 | s IC TA7357AP |
| IC101 | 8-759-208-10 | s IC TC4053BPHB |
| IC200 | 8-759-206-29 | s IC TA7060AP-SONY |
| IC301 | 8-743-880-00 | s IC BX-388 |
| IC400 | 8-759-045-38 | s IC MC14538BCP |
| IC401 | 8-749-900-87 | s IC BX1470L |
| IC402 | 8-759-922-61 | s IC SN16913P-A |
| IC403 | 8-759-206-29 | s IC TA7060AP-SONY |
| IC500 | 8-752-006-12 | s IC CX20061 |
| IC501 | 8-759-982-21 | s IC RC78L05A |
| IC502 | 8-759-111-69 | s IC UPC1037HA |
| IC503 | 8-743-890-00 | s IC BX-389 |
| IC505 | 8-752-006-12 | s IC CX20061 |
| IC600 | 8-741-126-20 | s IC BX1262 |
| IC601 | 8-752-006-12 | s IC CX20061 |
| IC602 | 8-743-880-00 | s IC BX-388 |
| IC603 | 8-752-006-12 | s IC CX20061 |
| L1 | 1-410-482-31 | s INDUCTOR 100uH |
| L3 | 1-410-087-31 | s INDUCTOR 10mH |
| L4 | 1-410-087-31 | s INDUCTOR 10mH |
| L6 | 1-410-482-31 | s INDUCTOR 100uH |
| L7 | 1-410-464-11 | s INDUCTOR 3.3uH |
| L52 | 1-410-087-31 | s INDUCTOR 10mH |
| L53 | 1-410-476-11 | s INDUCTOR 33uH |
| L102 | 1-410-482-31 | s INDUCTOR 100uH |
| L103 | 1-410-482-31 | s INDUCTOR 100uH |
| L203 | 1-410-087-31 | s INDUCTOR 10mH |
| L204 | 1-410-482-31 | s INDUCTOR 100uH |
| L400 | 1-410-482-31 | s INDUCTOR 100uH |
| L401 | 1-410-482-31 | s INDUCTOR 100uH |
| L402 | 1-410-482-31 | s INDUCTOR 100uH |
| L501 | 1-410-482-31 | s INDUCTOR 100uH |
| L502 | 1-410-482-31 | s INDUCTOR 100uH |
| L503 | 1-410-482-31 | s INDUCTOR 100uH |
| L506 | 1-410-482-31 | s INDUCTOR 100uH |
| L600 | 1-410-482-31 | s INDUCTOR 100uH |
| L601 | 1-410-482-31 | s INDUCTOR 100uH |
| L602 | 1-410-471-11 | s INDUCTOR 12uH |
| L603 | 1-410-476-11 | s INDUCTOR 33uH |
| L604 | 1-410-470-11 | s INDUCTOR 10uH |
| L605 | 1-410-482-31 | s INDUCTOR 100uH |
| L650 | 1-410-470-11 | s INDUCTOR 10uH |
| L651 | 1-410-482-31 | s INDUCTOR 100uH |
| L653 | 1-410-471-11 | s INDUCTOR 12uH |
| L654 | 1-410-482-31 | s INDUCTOR 100uH |
| LV600 | 1-407-572-00 | s COIL, VAR 33UH |
| Q1 | 8-729-266-92 | s TRANSISTOR 2SC2669-0 |
| Q2 | 8-729-266-92 | s TRANSISTOR 2SC2669-0 |
| Q4 | 8-729-266-92 | s TRANSISTOR 2SC2669-0 |
| Q5 | 8-729-266-92 | s TRANSISTOR 2SC2669-0 |
| Q6 | 8-729-266-92 | s TRANSISTOR 2SC2669-0 |
| Q7 | 8-729-266-92 | s TRANSISTOR 2SC2669-0 |
| Q8 | 8-729-266-92 | s TRANSISTOR 2SC2669-0 |
| Q9 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q10 | 8-729-266-92 | s TRANSISTOR 2SC2669-0 |
| Q11 | 8-729-266-92 | s TRANSISTOR 2SC2669-0 |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(VO-30 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--------------------------|
| Q12 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q51 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q52 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q53 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q54 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q57 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q58 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q59 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q100 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q101 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q102 | 8-729-201-05 | s TRANSISTOR 2SC2878-B |
| Q103 | 8-729-201-05 | s TRANSISTOR 2SC2878-B |
| Q104 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q105 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q106 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q107 | 8-729-281-53 | s TRANSISTOR 2SC1815-GR |
| Q108 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q109 | 8-729-281-53 | s TRANSISTOR 2SC1815-GR |
| Q110 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q111 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q112 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q113 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q114 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q200 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q202 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q203 | 8-729-201-05 | s TRANSISTOR 2SC2878-B |
| Q204 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q205 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q206 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q207 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q208 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q209 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q210 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q211 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q301 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q310 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q400 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q401 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q402 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q403 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q404 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q405 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q406 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q407 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q408 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q409 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q410 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q411 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q412 | 8-729-900-65 | s TRANSISTOR DTA144ES |
| Q413 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q414 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q500 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q501 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q502 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q503 | 8-729-201-05 | s TRANSISTOR 2SC2878-B |
| Q504 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q505 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q506 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q507 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |

(VO-30 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|------------------------|
| Q508 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q509 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q510 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q511 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q512 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q600 | 8-729-119-76 | s TRANSISTOR 2SA1115P |
| Q601 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q602 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q603 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q604 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q605 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q650 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q651 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q652 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q653 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q654 | 8-729-201-05 | s TRANSISTOR 2SC2878-B |
| Q655 | 8-729-266-92 | s TRANSISTOR 2SC2669-O |
| Q656 | 8-729-201-05 | s TRANSISTOR 2SC2878-B |
| Q657 | 8-729-201-05 | s TRANSISTOR 2SC2878-B |
| R3 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R4 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R5 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R6 | 1-215-411-00 | s METAL 390 1% 1/6W |
| R7 | 1-249-414-11 | s CARBON 560 5% 1/4W |
| R8 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R9 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R10 | 1-215-405-00 | s METAL 220 1% 1/6W |
| R11 | 1-249-416-11 | s CARBON 820 5% 1/4W |
| R12 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R13 | 1-249-418-11 | s CARBON 1.2K 5% 1/4W |
| R14 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R15 | 1-215-405-00 | s METAL 220 1% 1/6W |
| R16 | 1-215-405-00 | s METAL 220 1% 1/6W |
| R17 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R20 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R21 | 1-249-430-11 | s CARBON 12K 5% 1/4W |
| R22 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R23 | 1-215-405-00 | s METAL 220 1% 1/6W |
| R25 | 1-215-405-00 | s METAL 220 1% 1/6W |
| R26 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R27 | 1-249-416-11 | s CARBON 820 5% 1/4W |
| R29 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R30 | 1-249-431-11 | s CARBON 15K 5% 1/4W |
| R31 | 1-249-410-11 | s CARBON 270 5% 1/4W |
| R32 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R33 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R34 | 1-249-410-11 | s CARBON 270 5% 1/4W |
| R35 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R36 | 1-215-438-00 | s METAL 5.1K 1% 1/6W |
| R37 | 1-215-394-00 | s METAL 75 1% 1/6W |
| R38 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R39 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R40 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R41 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R42 | 1-249-416-11 | s CARBON 820 5% 1/4W |
| R43 | 1-249-411-11 | s CARBON 330 5% 1/4W |
| R44 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R45 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R46 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(VO-30 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-----------------------|
| R51 | 1-249-414-11 | s CARBON 560 5% 1/4W |
| R52 | 1-249-398-11 | s CARBON 27 5% 1/4W |
| R53 | 1-249-411-11 | s CARBON 330 5% 1/4W |
| R54 | 1-249-431-11 | s CARBON 15K 5% 1/4W |
| R55 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R56 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R57 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R58 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R59 | 1-249-411-11 | s CARBON 330 5% 1/4W |
| R60 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R61 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R62 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R63 | 1-215-402-00 | s METAL 160 1% 1/6W |
| R64 | 1-249-411-11 | s CARBON 330 5% 1/4W |
| R67 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R68 | 1-249-422-11 | s CARBON 2.7K 5% 1/4W |
| R69 | 1-215-428-00 | s METAL 2K 1% 1/6W |
| R70 | 1-249-418-11 | s CARBON 1.2K 5% 1/4W |
| R100 | 1-215-405-00 | s METAL 220 1% 1/6W |
| R101 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R102 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R103 | 1-247-883-00 | s CARBON 150K 5% 1/4W |
| R104 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R105 | 1-247-895-00 | s CARBON 470K 5% 1/4W |
| R106 | 1-249-430-11 | s CARBON 12K 5% 1/4W |
| R107 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R108 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R110 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R111 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R112 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R113 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R114 | 1-215-419-00 | s METAL 820 1% 1/6W |
| R115 | 1-215-416-00 | s METAL 620 1% 1/6W |
| R116 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R117 | 1-249-406-11 | s CARBON 120 5% 1/4W |
| R118 | 1-249-406-11 | s CARBON 120 5% 1/4W |
| R119 | 1-249-424-11 | s CARBON 3.9K 5% 1/4W |
| R120 | 1-249-424-11 | s CARBON 3.9K 5% 1/4W |
| R121 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R122 | 1-249-424-11 | s CARBON 3.9K 5% 1/4W |
| R123 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R124 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R125 | 1-249-436-11 | s CARBON 39K 5% 1/4W |
| R126 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R127 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R128 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R129 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R130 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R131 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R132 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R133 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R134 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R135 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R136 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R137 | 1-249-418-11 | s CARBON 1.2K 5% 1/4W |
| R138 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R139 | 1-249-428-11 | s CARBON 8.2K 5% 1/4W |
| R140 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R141 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |

(VO-30 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-----------------------|
| R142 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R143 | 1-249-422-11 | s CARBON 2.7K 5% 1/4W |
| R144 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R145 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R146 | 1-249-401-11 | s CARBON 47 5% 1/4W |
| R147 | 1-249-401-11 | s CARBON 47 5% 1/4W |
| R149 | 1-215-394-00 | s METAL 75 1% 1/6W |
| R150 | 1-215-394-00 | s METAL 75 1% 1/6W |
| R151 | 1-247-903-00 | s CARBON 1M 5% 1/4W |
| R152 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R153 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R200 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R201 | 1-249-432-11 | s CARBON 18K 5% 1/4W |
| R203 | 1-215-414-00 | s METAL 510 1% 1/6W |
| R204 | 1-215-419-00 | s METAL 820 1% 1/6W |
| R207 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R208 | 1-249-416-11 | s CARBON 820 5% 1/4W |
| R209 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R210 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R211 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R212 | 1-215-424-00 | s METAL 1.3K 1% 1/6W |
| R214 | 1-215-416-00 | s METAL 620 1% 1/6W |
| R215 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R216 | 1-215-421-00 | s METAL 1K 1% 1/6W |
| R217 | 1-215-397-00 | s METAL 100 1% 1/6W |
| R218 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R219 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R220 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R221 | 1-249-418-11 | s CARBON 1.2K 5% 1/4W |
| R222 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R223 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R224 | 1-249-428-11 | s CARBON 8.2K 5% 1/4W |
| R225 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R226 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R227 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R228 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R229 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R230 | 1-249-401-11 | s CARBON 47 5% 1/4W |
| R231 | 1-249-401-11 | s CARBON 47 5% 1/4W |
| R232 | 1-215-394-00 | s METAL 75 1% 1/6W |
| R301 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R302 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R303 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R305 | 1-215-438-00 | s METAL 5.1K 1% 1/6W |
| R306 | 1-215-394-00 | s METAL 75 1% 1/6W |
| R307 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R335 | 1-215-431-00 | s METAL 2.7K 1% 1/6W |
| R337 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R338 | 1-215-421-00 | s METAL 1K 1% 1/6W |
| R341 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R401 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R402 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R403 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R405 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R406 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R407 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R408 | 1-249-424-11 | s CARBON 3.9K 5% 1/4W |
| R409 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R410 | 1-249-424-11 | s CARBON 3.9K 5% 1/4W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(VO-30 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-----------------------|
| R411 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R412 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R413 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R414 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R415 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R416 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R417 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R418 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R419 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R420 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R421 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R422 | 1-249-410-11 | s CARBON 270 5% 1/4W |
| R423 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R424 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R425 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R426 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R427 | 1-249-427-11 | s CARBON 6.8K 5% 1/4W |
| R428 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R429 | 1-249-424-11 | s CARBON 3.9K 5% 1/4W |
| R430 | 1-249-414-11 | s CARBON 560 5% 1/4W |
| R431 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R433 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R434 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R435 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R436 | 1-249-422-11 | s CARBON 2.7K 5% 1/4W |
| R437 | 1-249-418-11 | s CARBON 1.2K 5% 1/4W |
| R438 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R439 | 1-215-432-00 | s METAL 3K 1% 1/6W |
| R440 | 1-249-415-11 | s CARBON 680 5% 1/4W |
| R441 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R442 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R443 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R444 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R445 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R446 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R447 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R448 | 1-249-404-00 | s CARBON 82 5% 1/4W |
| R449 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R450 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R451 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R500 | 1-249-431-11 | s CARBON 15K 5% 1/4W |
| R501 | 1-249-431-11 | s CARBON 15K 5% 1/4W |
| R502 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R503 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R504 | 1-249-432-11 | s CARBON 18K 5% 1/4W |
| R506 | 1-249-416-11 | s CARBON 820 5% 1/4W |
| R507 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R508 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R509 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R510 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R511 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R512 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R513 | 1-249-411-11 | s CARBON 330 5% 1/4W |
| R514 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R515 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R516 | 1-249-423-11 | s CARBON 3.3K 5% 1/4W |
| R517 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R518 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R519 | 1-249-429-11 | s CARBON 10K 5% 1/4W |

(VO-30 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-----------------------|
| R520 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R521 | 1-249-403-11 | s CARBON 68 5% 1/4W |
| R522 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R523 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R524 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R525 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R526 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R527 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R530 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R531 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R532 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R533 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R534 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R535 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R536 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R537 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R538 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R539 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R540 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R541 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R542 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R558 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R559 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R600 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R601 | 1-247-883-00 | s CARBON 150K 5% 1/4W |
| R603 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R604 | 1-249-405-11 | s CARBON 100 5% 1/4W |
| R605 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R606 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R607 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R608 | 1-215-409-00 | s METAL 330 1% 1/6W |
| R609 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R610 | 1-249-414-11 | s CARBON 560 5% 1/4W |
| R611 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R612 | 1-215-409-00 | s METAL 330 1% 1/6W |
| R613 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R614 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R615 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R618 | 1-215-438-00 | s METAL 5.1K 1% 1/6W |
| R619 | 1-215-394-00 | s METAL 75 1% 1/6W |
| R620 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R621 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R622 | 1-249-438-11 | s CARBON 56K 5% 1/4W |
| R623 | 1-249-414-11 | s CARBON 560 5% 1/4W |
| R650 | 1-249-431-11 | s CARBON 15K 5% 1/4W |
| R651 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R652 | 1-215-418-00 | s METAL 750 1% 1/6W |
| R653 | 1-249-431-11 | s CARBON 15K 5% 1/4W |
| R654 | 1-249-431-11 | s CARBON 15K 5% 1/4W |
| R655 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R656 | 1-249-431-11 | s CARBON 15K 5% 1/4W |
| R657 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R658 | 1-249-432-11 | s CARBON 18K 5% 1/4W |
| R659 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R661 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R663 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R664 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R665 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| R666 | 1-249-437-11 | s CARBON 47K 5% 1/4W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(VO-30 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-------------------------|
| R667 | 1-249-418-11 | s CARBON 1.2K 5% 1/4W |
| R668 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R669 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R670 | 1-249-441-11 | s CARBON 100K 5% 1/4W |
| R671 | 1-249-413-11 | s CARBON 470 5% 1/4W |
| RV1 | 1-228-991-00 | s RES, ADJ, METAL 2.2K |
| RV2 | 1-228-994-00 | s RES, ADJ, METAL 10K |
| RV3 | 1-228-991-00 | s RES, ADJ, METAL 2.2K |
| RV4 | 1-228-991-00 | s RES, ADJ, METAL 2.2K |
| RV5 | 1-228-990-00 | s RES, ADJ, METAL 1K |
| RV51 | 1-228-990-00 | s RES, ADJ, METAL 1K |
| RV52 | 1-228-990-00 | s RES, ADJ, METAL 1K |
| RV100 | 1-228-993-00 | s RES, ADJ, METAL 4.7K |
| RV101 | 1-228-991-00 | s RES, ADJ, METAL 2.2K |
| RV201 | 1-228-991-00 | s RES, ADJ, METAL 2.2K |
| RV302 | 1-228-991-00 | s RES, ADJ, METAL 2.2K |
| RV400 | 1-228-995-00 | s RES, ADJ, METAL 22K |
| RV401 | 1-228-994-00 | s RES, ADJ, METAL 10K |
| RV402 | 1-228-991-00 | s RES, ADJ, METAL 2.2K |
| RV403 | 1-228-993-00 | s RES, ADJ, METAL 4.7K |
| RV404 | 1-228-991-00 | s RES, ADJ, METAL 2.2K |
| RV405 | 1-228-998-00 | s RES, ADJ, METAL 220K |
| RV501 | 1-228-989-00 | s RES, ADJ, METAL 470 |
| RV600 | 1-228-996-00 | s RES, ADJ, METAL 47K |
| RV601 | 1-228-990-00 | s RES, ADJ, METAL 1K |
| RV602 | 1-228-993-00 | s RES, ADJ, METAL 4.7K |
| TH400 | 1-800-200-00 | s THERMISTOR S-3K |
| TH401 | 1-800-200-00 | s THERMISTOR S-3K |
| X500 | 1-527-511-00 | s CRYSTAL 5.119166MHz |
| X650 | 1-527-374-00 | s CRYSTAL 5.35742180MHz |

YC-46 BOARD

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|--------------------------------|
| 1pc | A-7062-153-A | o MOUNTED CIRCUIT BOARD, YC-46 |
| C101 | 1-130-483-00 | s MYLAR 0.01uF 5% 50V |
| C108 | 1-130-483-00 | s MYLAR 0.01uF 5% 50V |
| C110 | 1-107-210-00 | s MICA 22PF 5% 500V |
| C115 | 1-130-483-00 | s MYLAR 0.01uF 5% 50V |
| C117 | 1-107-080-91 | s MICA 62PF 5% 50V |
| C118 | 1-107-209-91 | s MICA 20PF 5% 500 |
| C120 | 1-107-075-91 | s MICA 39PF 5% 50V |
| C121 | 1-107-082-91 | s MICA 75PF 5% 50V |
| C150 | 1-107-085-00 | s MICA 100PF 5% 50V |
| C201 | 1-130-483-00 | s MYLAR 0.01uF 5% 50V |
| C202 | 1-107-087-00 | s MICA 120PF 5% 50V |
| C203 | 1-130-483-00 | s MYLAR 0.01uF 5% 50V |
| C204 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| C206 | 1-130-483-00 | s MYLAR 0.01uF 5% 50V |
| C207 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| C208 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| C209 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| C210 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| C211 | 1-107-202-91 | s MICA 10PF 5% 500 |
| C212 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| C213 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| C214 | 1-130-491-00 | s MYLAR 0.047uF 5% 50V |
| D106 | 8-719-911-19 | s DIODE 1SS119 |
| D107 | 8-719-911-19 | s DIODE 1SS119 |
| D108 | 8-719-911-19 | s DIODE 1SS119 |
| D109 | 8-719-911-19 | s DIODE 1SS119 |
| FL100 | 1-235-475-12 | s FILTER, LOW-PASS |
| FL102 | 1-236-564-11 | s FILTER, LOW-PASS |
| FL200 | 1-236-835-11 | s FILTER, BANDPASS |
| IC100 | 8-752-006-12 | s IC CX20061 |
| IC101 | 8-752-006-12 | s IC CX20061 |
| IC200 | 8-752-006-12 | s IC CX20061 |
| IC201 | 8-752-006-12 | s IC CX20061 |
| L100 | 1-410-482-31 | s INDUCTOR 100uH |
| L101 | 1-410-482-31 | s INDUCTOR 100uH |
| L103 | 1-410-473-11 | s INDUCTOR 18uH |
| L200 | 1-410-482-31 | s INDUCTOR 100uH |
| L201 | 1-410-482-31 | s INDUCTOR 100uH |
| Q100 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q101 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q102 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q103 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q104 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q105 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q106 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q107 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q109 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q110 | 8-729-900-89 | s TRANSISTOR DTC144ES |
| Q200 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q201 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q202 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q203 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q204 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| Q205 | 8-729-119-78 | s TRANSISTOR 2SC2785-HFE |
| R101 | 1-249-430-11 | s CARBON 12K 5% 1/4W |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

(YC-46 BOARD)

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|--------------|-----------------------|
| R102 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R103 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R105 | 1-215-414-00 | s METAL 510 1% 1/6W |
| R106 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R107 | 1-215-407-00 | s METAL 270 1% 1/6W |
| R108 | 1-215-429-00 | s METAL 2.2K 1% 1/6W |
| R109 | 1-247-830-11 | s CARBON 910 5% 1/4W |
| R111 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R112 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R113 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R115 | 1-215-421-00 | s METAL 1K 1% 1/6W |
| R116 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R117 | 1-249-432-11 | s CARBON 18K 5% 1/4W |
| R118 | 1-215-428-00 | s METAL 2K 1% 1/6W |
| R119 | 1-215-429-00 | s METAL 2.2K 1% 1/6W |
| R120 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R121 | 1-215-414-00 | s METAL 510 1% 1/6W |
| R122 | 1-249-417-11 | s CARBON 1K 5% 1/4W |
| R123 | 1-215-422-00 | s METAL 1.1K 1% 1/6W |
| R124 | 1-249-432-11 | s CARBON 18K 5% 1/4W |
| R125 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R126 | 1-249-406-11 | s CARBON 120 5% 1/4W |
| R129 | 1-215-428-00 | s METAL 2K 1% 1/6W |
| R130 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R131 | 1-249-426-11 | s CARBON 5.6K 5% 1/4W |
| R201 | 1-215-417-00 | s METAL 680 1% 1/6W |
| R203 | 1-215-423-00 | s METAL 1.2K 1% 1/6W |
| R204 | 1-249-419-11 | s CARBON 1.5K 5% 1/4W |
| R205 | 1-249-434-11 | s CARBON 27K 5% 1/4W |
| R206 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R207 | 1-249-425-11 | s CARBON 4.7K 5% 1/4W |
| R208 | 1-249-433-11 | s CARBON 22K 5% 1/4W |
| R209 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R210 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R211 | 1-249-432-11 | s CARBON 18K 5% 1/4W |
| R212 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R213 | 1-215-421-00 | s METAL 1K 1% 1/6W |
| R214 | 1-215-421-00 | s METAL 1K 1% 1/6W |
| R215 | 1-249-438-11 | s CARBON 56K 5% 1/4W |
| R216 | 1-249-437-11 | s CARBON 47K 5% 1/4W |
| R217 | 1-249-421-11 | s CARBON 2.2K 5% 1/4W |
| R218 | 1-215-415-00 | s METAL 560 1% 1/6W |
| R219 | 1-215-415-00 | s METAL 560 1% 1/6W |
| R220 | 1-215-429-00 | s METAL 2.2K 1% 1/6W |
| R222 | 1-249-432-11 | s CARBON 18K 5% 1/4W |
| R223 | 1-249-429-11 | s CARBON 10K 5% 1/4W |
| R224 | 1-249-399-11 | s CARBON 33 5% 1/4W |
| R225 | 1-215-423-00 | s METAL 1.2K 1% 1/6W |

FRAME

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|----------------|---|
| lpc | A-7048-389-A | s DRUM ASS'Y, DGH-68A-R |
| lpc | A-7049-328-A | s DRUM ASS'Y, DGH-68-R |
| lpc | △ 1-532-203-00 | s FUSE, TIME-LAG |
| lpc | 1-535-535-11 | s TERMINAL, SHAFT GROUND |
| lpc | 1-555-724-00 | o WIRE, GROUND |
| C901 | 1-161-057-00 | s CERAMIC 0.033uF 10% 50V |
| C1001 | 1-161-057-00 | s CERAMIC 0.033uF 10% 50V |
| CN1001 | 1-561-577-21 | s CONNECTOR, 8P, FEMALE "MONITOR TV" |
| CN1002 | 1-507-467-00 | s JACK, PIN 1P, FEMALE "MONITOR, AUDIO" |
| CN1003 | 1-562-227-21 | s CONNECTOR, BNC, FEMALE "MONITOR VIDEO" |
| CN1004 | 1-562-227-21 | s CONNECTOR, BNC, FEMALE "VIDEO IN" |
| CN1005 | 1-562-227-21 | s CONNECTOR, BNC, FEMALE "SYNC IN" |
| CN1006 | 1-562-227-21 | s CONNECTOR, BNC, FEMALE "VIDEO OUT" |
| CN1007 | 1-563-029-21 | s CONNECTOR, XLR 3P, FEMALE "AUDIO LINE IN CH-1/L" |
| CN1008 | 1-563-029-21 | s CONNECTOR, XLR 3P, FEMALE "AUDIO LINE IN CH-2/R" |
| CN1007 | 1-566-850-31 | s CONNECTOR (S), TERMINAL 4P "S VIDEO IN" |
| CN1008 | 1-566-850-31 | s CONNECTOR (S), TERMINAL 4P "S VIDEO OUT" |
| CN1009 | 1-507-797-21 | s JACK, LARGE TYPE 2P |
| CN1011 | 1-507-854-00 | s JACK, PHONE "HEADPHONES" |
| CN1012 | 1-563-030-21 | s CONNECTOR, XLR 3P, MALE "AUDIO LINE OUT CH-1/L" |
| CN1013 | 1-563-030-21 | s CONNECTOR, XLR 3P, MALE "AUDIO LINE OUT CH-2/R" |
| CN1014 | 1-561-045-00 | s CONNECTOR, RF, FEMALE "DUB OUT" |
| CN1016 | △ 1-560-222-11 | s INLET, AC 3P, MALE "AC IN" |
| CS1001 | 1-806-682-51 | s SENSOR, CONDENSATION |
| M1002 | 8-835-304-11 | s MOTOR, DC U-11B "REEL" |
| M1003 | 8-835-364-01 | s MOTOR, DC BHF-2802B "CAPSTAN" |
| M1005 | 8-835-138-01 | s MOTOR, DC (DNR-5301B) |
| M1006 | 1-541-360-21 | s MOTOR, FAN |
| ME1001 | 1-520-506-11 | s METER AUDIO LEVEL CH-1 |
| ME1002 | 1-520-506-11 | s METER AUDIO LEVEL CH-2 |
| PM1001 | △ 1-454-377-31 | s SOLENOID "BRAKE" |
| S1001 | △ 1-570-117-41 | s SWITCH, ROCKER "POWER" |
| S1002 | 1-553-226-00 | s SWITCH, LEAF "CASSETTE DOWN" |
| S1003 | 1-570-407-11 | s SWITCH, SLIDE "CASSETTE IN" |
| S1010 | 1-572-298-21 | s SWITCH, PUSH (3 KEY) "REC PROOF/MPHG/ME/MP" |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.

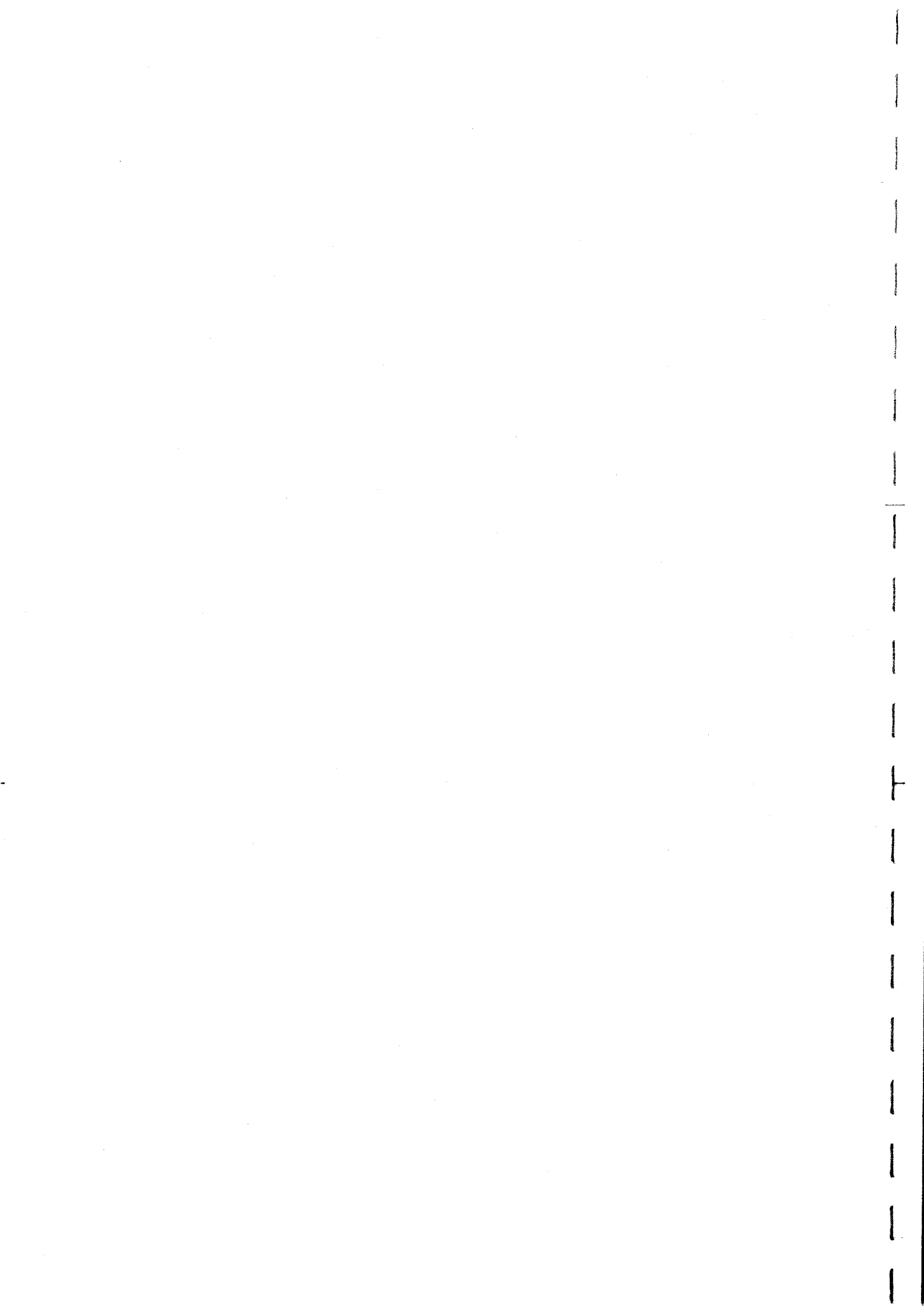
14-4. PACKING MATERIAL AND ACCESSORIES

| Ref. No. or Q'ty | Part No. | SP Description |
|---------------------|---------------|------------------------|
| 1 | △1-556-761-11 | s CORD, POWER (3 CORE) |
| 1 | 3-701-630-00 | s BAG, POLYETHYLENE |
| 1 | 3-701-648-00 | s BAG, POLYETHYLENE |
| 1 | 3-738-942-01 | o CUSHION (LOWER) |
| 1 | 3-738-943-01 | o CUSHION (UPPER) |
| 1 | 3-738-952-01 | o SPACER |
| 1 | 3-738-959-01 | o INDIVIDUAL CARTON |
| 1 | △3-750-690-41 | s MANUAL, INSTRUCTION |

14-5. FIXTURE (OPTION)

| Part No. | SP Description |
|--------------|------------------------------------|
| Y-2031-001-1 | o CLEANING FLUID |
| J-6080-824-A | o FWD, REV WINDING TORQUE CASSETTE |
| J-6080-825-A | o MODE SELECTOR |
| J-6080-826-A | o NO.6 GUIDE LOCK SCREW DRIVER |
| J-6080-827-A | o DIAL TENSION GAUGE |
| J-6080-831-A | o TENSION MEASUREMENT REEL |
| J-6080-832-A | o TENSION MEASUREMENT REEL |
| J-6080-840-A | o SMALL ADJUSTMENT MIRROR |
| J-6080-883-A | o RE/SWP CONNECTOR |
| J-6080-884-A | o CTL CONNECTOR |
| J-6080-891-A | o TRACK SHIFT TOOL |
| 7-700-766-01 | o HEXAGONAL SCREWDRIVER |
| 7-741-900-53 | o WIPING CLOTH |
| 8-967-992-17 | o ALIGNMENT TAPE, WR2-3CS |
| 8-967-995-07 | o ALIGNMENT TAPE, WR5-1CP |
| 8-967-995-18 | o ALIGNMENT TAPE, WR5-7CE |
| 8-967-995-47 | o ALIGNMENT TPPE, WR5-4CSP |
| 8-967-995-48 | o ALIGNMETN TAPE, WR5-8CSE |

NOTE: Please see pages 14-15 thru 14-18 for the parts that are not listed in the parts list.



SPECIFICATIONS

| System | |
|------------------------|--|
| Recording system | Rotary 2-head helical scan Luminance: FM recording Color signal: converted subcarrier direct recording |
| Video signal system | CCIR standards, PAL color |
| Audio recording system | Normal recording AFM: Rotary head, FM system (monaural) PCM: PCM format (two channels) |

| Video | |
|-------------------------|--|
| Inputs | VIDEO IN (BNC type) × 1 1.0 Vp-p±0.3 Vp-p, 75 ohms, unbalanced, sync negative S-VIDEO IN (4-pin mini-DIN) × 1 Luminance: 1.0 V p-p, 75 ohms, unbalanced, sync negative Chrominance: 0.3 V p-p at burst level, 75 ohms, unbalanced |
| Outputs | VIDEO OUT (BNC type) × 1 1.0 Vp-p±0.2 Vp-p, 75 ohms, unbalanced, sync negative DUB OUT (7-pin) × 1 MONITOR TV (8-pin) × 1 MONITOR VIDEO (BNC type) × 1 S-VIDEO OUT (4-pin mini-DIN) × 1 Luminance: 1.0 V p-p, 75 ohms, unbalanced, sync negative Chrominance: 0.3 V p-p at burst level, 75 ohms, unbalanced |
| Horizontal resolution | Hi8 mode recording: 400 lines (both B/W and color) (S-VIDEO signals) |
| S/N | Hi8 mode 45 dB (with ME tape) Conventional format 45 dB (color) |
| Sync signal input | SYNC IN (BNC type) × 1 2.5 Vp-p (1 to 5 Vp-p), 75 ohms, unbalanced |
| Recording level control | Automatic |

| Audio | |
|-------------------------|--|
| Input | AUDIO LINE IN CH-1/L, CH-2/R (XLR 3-pin female) × 1 each +4 dB, 10 k ohms, balanced MICROPHONES CH-1/L, CH-2/R (phone jack) × 1 each -60 dB, 3 k ohms, unbalanced |
| Outputs | AUDIO LINE OUT CH-1/L, CH-2/R (XLR 3-pin male) × 1 each +4 dBm (at 600 ohm load), balanced MONITOR AUDIO (phono jack) × 1 -5 dB (at 47 k ohm load) MONITOR TV (8 pin) × 1 HEADPHONES (stereo phone jack) For 8-ohm headphones Level adjustable (from -26 to -46 dB) |
| Frequency response | AFM: 30 to 15,000 Hz PCM: 20 to 15000 Hz (both audio channel 1 and 2) |
| Dynamic range | PCM: more than 80 dB |
| Recording level control | Manual or limiter selectable |
| PCM sampling frequency | 31.5 kHz |

| Other functions | |
|---------------------|---|
| Pause | A still picture is obtained with long pause function |
| Search | Still, 1/30 to 15 times normal speed in forward direction, 1/30 to 13 times normal speed in reverse direction |
| Sync system | Automatic switching between internal and external |
| Dropout compensator | Built-in |

| Tape transport | |
|------------------------------|-------------------------------------|
| Tape speed | 20.05 mm/sec. |
| Recording and playback time | Approx. 90 minutes (in SP mode) |
| Fast forward and rewind time | Within 3 minutes (with E5-90/P5-90) |
| Tape compatibility | 8 mm video cassette tapes |
| Usable tapes | E5-HME, P5-MP series and equivalent |

| General | |
|-----------------------|---|
| Power requirements | Rated voltage: 220 to 240 V AC, 50/60 Hz Operating voltage: 198 to 264 V AC, 48 to 64 Hz |
| Power consumption | 55 W |
| Operating position | Horizontal (up to 20 degrees) |
| Storage temperature | -20°C to +60°C (-4°F to +140°F) |
| Operating temperature | 5°C to 40°C (41°F to 104°F) |
| Dimensions | 424 × 146.5 × 452 mm (w/h/d) (16 3/4 × 5 7/8 × 17 7/8 inches) not including projecting parts and controls |
| Weight | Approx. 14 kg (30 lb 14 oz) |
| Supplied accessories | AC power cord (1) Operating instructions (1) |

Design and specifications are subject to change without notice.

| Recommended video equipment and accessories | |
|---|--|
| Editing Control Unit RM-450CE, RM-440 (when the BKU-703A installed) | |
| Color Video Monitor Sony CVM and PVM series | |
| Color Video Camera Sony DXC series | |
| 33P Editing Interface BKU-703A | |
| Remote Control Unit RM-500, RM-580 (when the BKU-703A installed) | |
| Cleaning Cassette V8-25CLH | |
| Remote Control Cable RCC-5G (9-pin), RCC-5F (33-pin) | |
| Dubbing Cable VDC-5 (5 m) | |
| Monitor Connecting Cable VMC-3P (3 m), VMC-5P (5 m), VMC-10P (10 m) | |
| Multi Remote Control Unit RM-555 (when the BKU-703A installed) | |
| Video and Audio Switcher BVS-500 | |
| VTR Selector RM-V5 | |
| Rack Mount Kit RMM-980 | |
| S-VIDEO connecting cable YC-30V (3 m) | |

